The American City

DECEMBER 1951

An attractive holiday display lights up the Village Hall of Lyndhurst, N. J.

Buffalo specifies Sheet Asphalt for large street resurfacing program

Buffalo, New York State's second largest city, is in the midst of an extensive street resurfacing program. Old, worn streets throughout the city, including many of its principal thoroughfares, are being topped with resilient, heavy-duty Sheet Asphalt paving, consisting of binder course and wearing surface.

Prior to the present program, more than 1,000,000 square yards of Buffalo streets had been paved with Texaco Sheet Asphalt. Low upkeep cost has been an important feature of the performance of this paving. Here, for example, is what it has cost the city to maintain Texaco Sheet Asphalt pavements which have seen more than 25 years' service to date: A 26-year-old pavement on Hinman Avenue—$.002 per sq. yd. per year; a 26-year-old pavement on Gold Street—$.0002 per sq. yd. per year; a 29-year-old pavement on Kensington Avenue—$.006 per sq. yd. per year; a 30-year-old pavement on Sycamore Street—$.003 per sq. yd. per year.

This year, Buffalo has added approximately 400,000 square yards of Texaco Sheet Asphalt to the yardage laid in the past. Another substantial increase will be made in 1952.

Delaware Avenue (above) and Niagara Square (right) were paved this year with Texaco Sheet Asphalt by Kendall Roadways, Inc., of Buffalo, which has been awarded a substantial portion of the city's extensive street resurfacing program. Seven important streets converge at Niagara Square, all of which were partially resurfaced this year with Texaco Sheet Asphalt.

•

Helpful information about Sheet Asphalt is supplied in the booklet, "Texaco Asphalt Paving—Plant-mixed Types." Write our nearest office for a free copy, with no obligation.

THE TEXAS COMPANY, Asphalt Sales Dept., 135 E. 42nd Street, New York City 17

Boston 16 Chicago 4 Denver 1 Houston 1 Jacksonville 2 Philadelphia 2 Richmond 19

TEXACO

REG. T.M.

TEXACO ASPHALT

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THE MUNICIPAL INDEX and ATLAS (over 900 pages), published annually by the American City Magazine Corporation, when used with the current advertisements in THE AMERICAN CITY, provides officials with the latest information on all types of municipal equipment and supplies.

Index to Advertisers, p. 214 • Coming Conventions, p. 171 • Copies of this issue printed, 23,000

Telephone Folks Will Play Santa for Thousands of Kids

As you read this, telephone operators all over the country are dressing thousands of dolls for children's homes and hospitals at Christmas.

Down in Texas, other telephone people are packing gay gift boxes for remote farm families. On December 24, the pilot who patrols Long Distance cables across the lonely plains will drop them by parachute and wave a friendly "Merry Christmas" by waggling the wings of his plane.

Throughout the Bell System, thousands of other telephone men and women are collecting food, candy, toys and dollars for those less fortunate than themselves.

It's a long-time telephone tradition — and a rather natural one. The spirit of service and the spirit of Christmas are pretty close together. And telephone folks try to be good citizens *all* year 'round.

BELL TELEPHONE SYSTEM

Our Municipal Notebook

San Francisco Bay Area Port Study Leads to Action

FOR the first time in the history of the San Francisco Bay Area, an organization has been established by the California State Legislature to work with the cities of the Bay region in improving its harbor situation and expanding its world trade.

The San Francisco Bay Ports Commission was created by the 1951 Legislature upon the recommendation of the Senate Fact-Finding Committee on Bay Area Ports, headed by Senator Jesse M. Mayo, Chairman, and Senator Arthur Breed, Jr., Vice-Chairman.

The Final Report of the Senate Committee, recently released, is one of the most comprehensive studies of an American harbor region and its port and maritime problems ever to be issued. It provides a basic document for study and action, and should also be of interest and value to all local officials concerned with port development and promotion problems.

The 600-page publicly released volume entitled "San Francisco Bay Ports" includes 32 pages of maps, charts, port illustrations, and innumerable tables, and was prepared under the direction of Frank E. Felix, Executive Secretary, in charge of the Committee's study program, with the assistance of Helen M. Gibbs, Research Associate, and a large staff of consultants and contributors. The committee's offices are at Room 202, 1182 Market St., San Francisco, Calif.

Milwaukee County Buys Land at Auction

AN UNUSUAL method for disposing of its tax-delinquent land prevails in the County of Milwaukee. Once a year the County checks up on its unpaid real estate and publishes a delinquent tax list, in accordance with state law. All property on which taxes have not been paid is offered for sale at an auction—a typical procedure. However, no bidder except the county itself is permitted to bid on the property.

That the procedure is an important one is evident from the October 1951 auction figures showing that the delinquent real-estate-tax property the county sold to itself was valued at $305,194.

County officials found that at open auctions of such lands in the past, when the public was invited to bid, the county usually found itself owner of only the poorest lots from among those offered. Now, under the present law, the county gets the good as well as the bad real estate. This means that all lands thus acquired which are later sold by the County real-estate department can be realistically re-valued by the real-estate agent, and all of the real estate is thus put back on the county tax rolls.

Thus the auction device is merely a matter of form to comply with Wisconsin law.

The Night Before Christmas

(Slightly Revised)

T'was the night before Christmas, when all through the house
Not a creature was stirring, not even a mouse;
When out in the street there arose such a clatter,
I rushed to the window to see what was the matter.
When, what should I see as I looked down below,
But the **Street Department** shoveling the new fallen snow.
Then I saw a **Police** car patrolling its beat,
And I knew the whole force would keep safe every street.
Soon I heard a **fire** siren, and I knew without doubt
All soon would be well and the fire be put out.
While men at the **Water Department** would be working for sure
To supply all with water—both healthful and pure.
Then I thought of the **city employees** who work day and night
To make **Concordia** a place of delight,
And thankfully said, as they passed from my sight,
A Merry Christmas to all, and to all a good night.

CITY OF CONCORDIA — Commission - Manager Form of Government
Commissioners: R. H. JOHNSTON, M. C. COOL, HENRY FREEMAN
City Manager: E. ALAN WEBSTER

POLICE DEPARTMENT	FINANCE DEPARTMENT
CITY ATTORNEY	STREET DEPARTMENT
FIRE DEPARTMENT	MUNICIPAL COURT
WATER DEPARTMENT	CITY BOARD OF HEALTH
CITY ENGINEER	MUNICIPAL FREE LIBRARY
PARK DEPARTMENT	CITY RECREATION AND PLAYGROUND COMMISSION
CEMETERY DEPARTMENT	MUNICIPAL BAND
MUNICIPAL AIRPORT	

Christmas greetings mailed to *The American City* from Concordia, Kans.

Ford Motor Company Sponsors Model Community

A 4,500-acre tract of land in Dearborn, Mich., estimated to be worth more than $5,000,000, will be converted into a model community by the Ford Motor Company. Preliminary planning has been completed, and the architectural firm of Skidmore, Owings and Merrill has been commissioned to prepare a detailed outline for development of both residential and commercial areas, with appropriate provision for churches, schools, playgrounds and parks, and a civic and community center, including a sports arena.

A Citizens Advisory Group will be named to collaborate with the consulting firm, composed of representative civic leaders of the City of Dearborn. Two months ago the Ford Motor Company gave 31.7 acres to the city for use as a public park and 11½ acres to the Dearborn Board of Education for use in a horticultural training program.

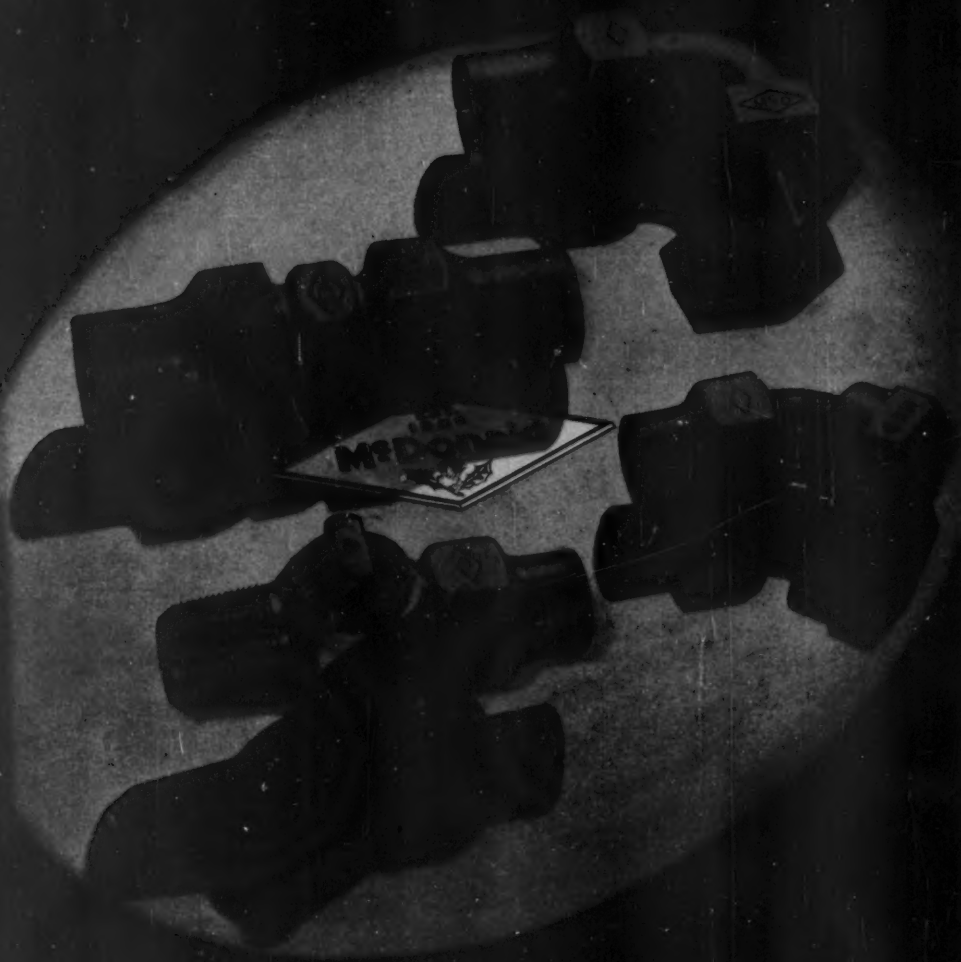
The American City Quiz

Match Wits with the Experts

QUESTIONS

1. ***What difference is there between the use of rock salt and that of calcium chloride for ice control on city streets?***
2. ***In an incinerator design, where should the floor-dump design be used, and where should one use the pit-and-crane type of plant?***
3. ***When softening water by the ion-exchange method, how does the effectiveness of zeolites compare with that of the new polystrene resonous compounds?***
4. ***How do the British collect refuse from multiple-family dwellings?***
5. ***How much area is required per "million gallons daily" of pumping capacity in a water-pumping station?***
6. ***What are some good policies to follow to keep sewers clear?***
7. ***What is the weakness of the Ringelmann test for smoke-abatement work?***
8. ***How can one increase the capacity of fixed-nozzle trickling-filter beds?***
9. ***What is an easy, inexpensive way to rehabilitate scaled sidewalks?***
10. ***How popular is the municipal-authority type of operation for various city services?***

(Answers on page 9)



5,000 to 5,000,000

Towns and cities of all sizes throughout the United States are regular users of McDONALD Waterworks Brass. For 95 years the McDONALD Diamond has meant "Uniform Top Quality". Shown above is E-4701 corporation stop with various type adaptors and 3 part copper coupling.

An illustrated brochure with detailed specifications showing our complete line of Waterworks Brass will be sent to you promptly on request. A. Y. McDonald Mfg. Co., Dubuque, Iowa.

EST. 1856

McDonald

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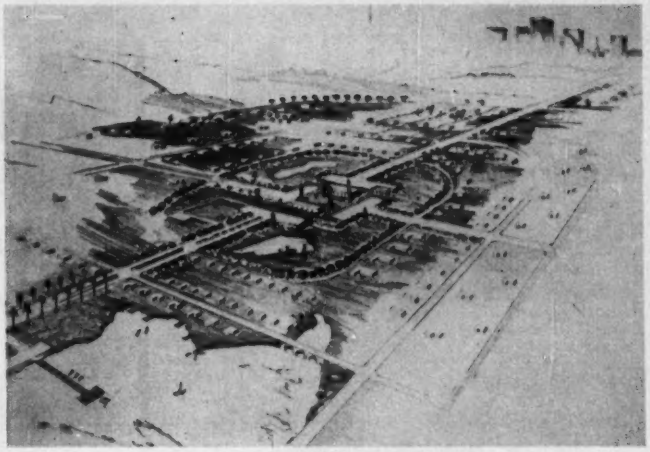
Should the Aged Without Families Be Segregated?

THIS MAGAZINE has received from a Florida building company (Florida Sun Deck Homes), a news release announcing the completion of the first homes "in a $40,000,000 retirement village of 6,000 concrete and steel homes in Leisure City, Fla., containing one bedroom and specifically designed for retired and semi-retired people."

Although it is stated that the project was begun after a study of the needs of retired civil service employees, teachers, police, firemen, and service men, THE AMERICAN CITY seriously questions the wisdom of segregating thousands of aged persons in one-bedroom houses without any young life with which to associate.

This problem of planning for an aging population was discussed at some length at the recent National Planning Conference. An abstract of the paper presented at that meeting by the Director of the Florida State Improvement Commission will be found on page 163 of this issue. The commission's proposed neighborhood villages, we are glad to note, make some provision for young life in these communities for the aged, and even in the Leisure City development it is reported that some sales are being made to younger people.



A proposed neighborhood village for the aged.

Playground on Wheels

THE latest wrinkle in recreation is a playmobile donated to Detroit by a local civic group. Built on a truck bed, the playmobile is about 22 feet wide and 16 feet long—large enough for a game area. It has a built-in sand box, a slide, four baby swings, and four small tables which are used for crafts, checkers, and the like.

A trained leader from the city's Department of Parks and Recreation accompanies the mobile playground on its trips, telling stories, organizing games and classes in crafts, and giving safety-patrol instruction.

Per Capita Costs of Municipal Services

THE accompanying table is from the "Summary of City Finances in 1950," issued in October 1951 by the Bureau of the Census. This report summarizes, for the 1950 fiscal year, revenues and expenditures by population groups of the 474 cities of over 25,000 inhabitants.

The Bureau of the Census calls attention to the fact that attempted comparisons of per capita financial data for individual cities and city size-groups should take particular account of the differences among the cities in their responsibilities for various functions and activities. For example, the per capita figures for the cities of 500,000 to 1,000,000 (Group II) are generally much higher than those for other city size-groups. It is to be noted that the 13 cities in Group II include a high proportion which provide governmental services more commonly provided in other city areas by county or state governments and by independent school districts.

Financial data on each individual city and additional information on debt transactions and on city enterprises and trust funds will appear in the forthcoming *Compendium of City Government Finances in 1950.*

Item	Total (474 cities)	Group I (5 cities of 1,000,000 or more)		Group II (13 cities of 500,000 to 1,000,000)	Group III (21 cities of 250,000 to 500,000)	Group IV (67 cities of 100,000 to 250,000)	Group V (125 cities of 50,000 to 100,000)	Group VI (243 cities of 25,000 to 50,000)
		Total	Excluding New York					
	1950 AMOUNTS PER CAPITA							
Total	$54.66	$71.22	$39.59	$66.88	$44.33	$45.34	$43.34	$39.90
General control	4.39	5.79	4.31	5.38	3.32	3.53	3.35	3.49
Public safety	13.14	16.04	14.83	15.53	11.82	11.55	11.01	9.98
Police	7.15	9.76	9.23	8.68	6.05	5.60	5.36	4.87
Fire	5.34	5.36	4.73	6.06	5.20	5.43	5.19	4.71
Other	.65	.91	.86	.78	.57	.51	.46	.40
Highways	3.95	3.41	3.23	4.07	3.69	3.86	4.39	4.80
Sanitation	4.56	5.68	4.44	5.55	4.10	3.78	3.59	3.54
Health	1.19	1.27	1.18	1.78	1.30	1.15	.88	.65
Hospitals	3.87	6.36	2.53	6.28	2.90	1.87	2.18	1.21
Public welfare	6.96	13.83	4.38	7.37	3.48	3.92	3.53	2.81
Correction	.52	1.02	.83	1.17	.28	.08	.03	.05
Schools	11.18	13.48	(1)	13.50	9.08	10.16	9.38	8.98
Libraries	.91	.99	1.09	1.21	.93	.84	.74	.69
Recreation	2.51	2.21	1.89	3.60	2.75	2.53	2.21	2.07
Miscellaneous and unallocable	1.48	1.18	.88	1.46	.67	2.05	2.05	1.63

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Adlake

Ottawa's Woman Mayor

CHARLOTTE WHITTON, prominent social worker and columnist, and a member of the Ottawa Board of Control, was inaugurated on October 15, 1951, as Mayor of Canada's capital city — the first woman to head the government of this municipality of nearly 200,000 inhabitants.

Dr. Whitton has the distinction, also, of being the only woman mayor of a Canadian city. Among the towns, there is also only one having a woman chief executive. This is the Town of Barrie, where Mrs. M. Hamilton is reported to be doing a very fine job as Mayor.

How Should Luxury Homes be Assessed For Taxation?

AN EXTENDED discussion at the recent annual conference of the National Association of Assessing Officers, in St. Louis, gave evidence of widespread concern with the problem of how to tax the outmoded old mansions that are to be found in most cities. The discussion was opened by a paper by John D. Wright, chairman of the Board of Assessors of Newton, Mass. Said Mr. Wright, in part:

Luxury-type homes, so termed, are usually a problem to value for tax purposes, especially if they are assessed according to the prevailing standard set by our courts, which in Massachusetts is fair cash value. If we adopt the customary standard of valuation of real estate, that of taking reproduction cost less depreciation, we are likely to arrive at some value entirely out of line with the conventional method of valuing property at its fair cash value. The extremely large, luxurious type of home is costly. It is not readily marketable because it is not attractive to the average buyer. Only a comparatively few have the means to purchase this type of home, and those who have the means usually prefer to build a home of their own choice. . . .

The so-called urban type of luxury home is likely to present to the assessors a lesser problem than the same type of house built in the country. The reason for this seems to be the difficulty of marketing a large house located somewhat remotely from town. Its use for anything but a residence may be limited to use as an institution, such as a school. The urban home is usually more easily converted to some use, such as a nursing home, school, club, or social center.

The rule established by our Massachusetts Supreme Court is set forth in the following words, referring to the valuation for tax purposes of a parcel of real estate: "its fair cash value is ascertained by a consideration of all those elements which make it attractive for valuable use to one under no compulsion to purchase but yet willing to buy for a fair price, attributing to each element of value the amount which it adds to the price likely to be offered by such a buyer. . . . It is said that the sum of all the elements of value to be considered 'cannot inflate the value beyond the price at which the property will sell in the market under fair conditions at the time designated'" (233 Mass. 190,208 and 238 Mass. 396,402).

The keen interest in this problem evidenced at the NAAO meeting resulted in no definite conclusions. It seemed to be the general opinion that the luxury-type home should, like other property, be assessed at its fair value, and that no special consideration should be given to this type of home. It was pointed out, however, that unusual features are often included in a home of this type, which do not add to the value of the property when placed on the market.

The American City Quiz

ANSWERS TO QUESTIONS ON PAGE 5

1. The calcium chloride appears to work faster. In Irvington, N. J., calcium chloride is used when the temperature drops below 20° F., and rock salt on all other days, according to I. J. Casey, Town Engineer.

2. Mark Owen, vice-president of the Nichols Engineering and Research Corporation, incinerator manufacturers, believes that the floor-dump design can be used best by those plants smaller than 100-tons-per-day rated capacity. The larger plants justify the pit and crane.

3. Julian Hinds, General Manager and Chief Engineer of the Metropolitan Water District of Southern California, finds that the zeolites have an average useful life of about 2,000,000 gallons per cubic foot of zeolite. The resinous exchangers have shown no deterioration after softening 4,000,000 gallons. The exchange capacity of the zeolite ranges from 10,000 grains of hardness removed per cubic foot with new material to 8,000 grains or less near the end of its useful life. The corresponding values for the resin are 23,000 and 21,000 grains per cubic foot. Salt regeneration with zeolite has been 0.3 to 0.5 pounds of salt per kilograin of hardness removed. With the resinous exchanger, the consumption can be reduced to 0.2 to 0.3 pounds.

4. J. C. Dawes, Ministry of Health, London, reports that multiple-family dwellings use chutes on the outside of the house to dispose of refuse. These discharge to large containers mounted on low, hand-pulled trucks for removal to refuse trucks.

5. This depends on the type of pump used. El Paso, Texas, built a booster pumping station and needed 100 square feet per mgd of pumping capacity and a building to cover it. Later, the city added to the station with an installation that required only 12 square feet of area per mgd and needed no building. The latter installation used Byron Jackson "Submersible" pump and motor. The pump and motor both go into a carefully sealed well shaft. The motor is sealed and operates under water. The booster is arranged by pumping out of a 30-inch casing.

6. Wichita, Kans., first keeps the sewers free of roots by the use of copper sulphate, with a 10-pound application in each sewer-manhole invert per six months. It uses a Flexible sewer-rod drag to clean large sewers, and applies Cloroben at the rate of two ppm in strong sewage to prevent odors.

7. J. W. Shaw, Chief Smoke Inspector, Detroit, Mich., points out that the Ringelmann test measures only color. The fly-ash count is probably more important. However, there is no simple means of measuring it.

8. Baltimore, Md., has increased the effectiveness of its fixed-nozzle trickling-filter beds by superimposing on them Dorr rotary distributors. By putting these distributors over 18 of the 30 acres of filter beds, it has increased their capacity from 100 to 140 mgd.

9. Beckley, W. Va., resurfaced some of its deteriorated sidewalks with Plastic Rock, made by the United Laboratories of Cleveland. The old scale was cleaned off and the Plastic Rock was laid over it to an average depth of ¼ inch.

10. Their growth in Pennsylvania gives some indication. Since 1935, when permissive legislation was enacted, 61 such authorities have come into existence. Of these, 119 are active. These include 78 water works, 29 sewers, 9 school buildings, 3 airports, 2 factory buildings, 2 parking lots, 1 combination theater and municipal building, 1 traffic-control center, 1 war memorial, and 1 flood-control project.

Send in your suggested questions with the answers on municipal topics for use in this feature. The AMERICAN CITY will make a small payment for each question accepted.

CLEVELAND IMPROVES ITS WATER DISTRIBUTION WITH 3 HORTON TANKS

"Solon" tank — 1,000,000-gallon Horton elevated tank located in suburban Solon Village. Plates for this tank were pickled and painted by the Phoscote Process.

"Bassett Road" tank—500,000-gallon Horton elevated tank in Westlake, a western suburb of Cleveland. This tank is 90 ft.-to-bottom and has a 25-ft. range in head.

CLEVELAND, OHIO is another large city that has taken positive measures to provide better water service throughout the day to thousands of customers. This has in part been accomplished by a well-planned distributed water storage program that especially caters to homes and industrial plants in outlying sections.

Playing an important part in Cleveland's far-sighted program are the three modern Horton elevated tanks pictured on this page. Their installation in Solon Village, Westlake and North Olmsted has helped obtain the *increased water pressures* and *decreased pressure variations* that have resulted in a greater degree of customer satisfaction throughout the areas they serve.

Horton elevated tanks with radial-cone bottoms are built in standard capacities from 500,000 to 3,000,000 gallons. Smaller elevated tanks with ellipsoidal bottoms are built in standard capacities up to 500,000 gallons. Horton Waterspheres are built in standard capacities from 25,000 to 250,000 gallons.

For more complete information about these structures or Horton welded steel reservoirs, write our nearest office.

"Dover Road" tank—2,000,000-gallon Horton elevated tank located in suburban North Olmsted. It has a radial-cone bottom and is 110 ft.-to-bottom. Like all Horton municipal water tanks, the "Dover Road" tank is built in accordance with A.W.W.A. specifications.

HORTON

WELDED STEEL

STORAGE TANKS

CHICAGO BRIDGE & IRON COMPANY

Plants in Birmingham, Chicago, Salt Lake City, and Greenville, Pa.

Atlanta 3	2114 Healey Bldg.	Los Angeles 17	1503 General Petroleum Bldg.
Birmingham 1	1502 North Fiftieth St.	New York 6	3308-165 Broadway Bldg.
Boston 10	1002-201 Devonshire St.	Philadelphia 3	1616-1700 Walnut Street Bldg.
Chicago 4	2127 McCormick Bldg.	Salt Lake City 4	501 West 17th South St.
Cleveland 15	2236 Guildhall Bldg.	San Francisco 4	1535—200 Bush St.
Detroit 26	1501 Lafayette Bldg.	Seattle 1	1301 Henry Bldg.
Havana	402 Abreu Bldg.	Tulsa 3	1625 Hunt Bldg.
Houston 2	2101 C & I Life Bldg.	Washington 6, D. C.	1163 Cafritz Bldg.

Water Supply and Treatment

How to Build and Maintain Water Improvements Under the Controlled Materials Plan

ACTUALLY, it should be easier to maintain proper water supply under the Controlled Materials Plan than it was before the plan was established. Water supply is a critical "industry" and the government does not intend to let it suffer. Director of the Water Resources Division of the National Production Authority is G. E. Arnold, Director of the San Diego Water Department. He is on leave from that post for the duration of the present program.

The procedure for applying for allotments and ratings for major new construction projects is not difficult. Orders placed with a supplier should have a rating only if it is necessary to meet scheduled delivery dates. Indiscriminate use of ratings will upset the rating pattern. Ratings are used by suppliers for establishing a base to get their allotments of raw materials.

For major construction, the first step is to file form CMP-4C with the National Production Authority, Washington 25, D. C. After the project number is received, it will be forwarded to the Water Resources Division, located in Temporary T Building, for action by them. The National Production Authority will acknowledge receipt of application by returning the postcard form CMP-51, submitted with the application. Local Department of Commerce offices have ample stocks of CMP-4C forms.

If the project is approved, material allotments will be identified by an allotment symbol. Water and sewage allotments will be given the number T-8. An allotment for the first quarter of 1951 will be identified as T-8-1Q52.

Application

The applicants should thoroughly justify their project by showing all facts in connection with any public-health aspects and by naming defense plants, military establishments, or other essential needs to be served. Plans or sketches should be included where needed to clarify the project and its relationship to defense, military, health, or other requirements.

A water utility is required to keep the records justifying the rating it receives for at least two years. There is ample reason for this. The material that the water works gets has to be taken away from someone else because there isn't enough to go around. A water utility should be able to prove what it needs.

For maintenance, repair, operation, and minor capital-additions records, the calendar year 1950 is the base year. If the utility wishes to use the fiscal year, it must use the one ending before March 1, 1951. CMP Regulation 5, Section 7, should be studied carefully in setting the base year since other alternatives are possible. After the base year has been selected, it cannot be changed.

Clearing Allotments

The allotment symbol used for maintenance, repair, and operation, is MRO, whereas the rating is DO-MRO. These allotments and ratings need not be cleared through Washington. One can place his own allotment or rating on an order, if it comes within the limits established in CMP Regulation 5, by placing the certification "Certified under CMP Regulation 5," signed by a duly authorized official of the company. The same rating and allotment can be used for any single minor capital addition where cost of material does not exceed $750. However, the aggregate dollar value of minor capital additions in any one quarter must not exceed $750, or 10% of the quarterly quota established under CMP Regulation 5, whichever is greater. Materials for MRO and minor capital additions which can be obtained without the use of the allotment symbol MRO and the rating DO-MRO during a quarter, need not be charged against the quarterly quota *provided* the company has not exceeded 20% of its quarterly quota for all materials requiring the allotment symbol MRO and the rating DO-MRO. Appeals for adjustments or exceptions to CMP Regulation 5 may be filed by writing to the National Production Authority, Washington 25, D. C., Reference CMP Regulation 5.

"Man—when them city fellas build a still—they build a *still*."

Rutland, Vt., Plans More Water Storage

NOT ENOUGH storage seems to be the crux of the problem in Rutland, Vt., and a citizens' committee has set about to correct it. At present, the city has a stored supply of 5,000,000 gallons and an average daily water use of 3,500,000 gallons. As long ago as 1908, George Whipple, one of the sanitary-engineering field's immortals, recommended to the city that it should store at least 64,000,000 gallons to serve adequately a population about half the size of Rutland today.

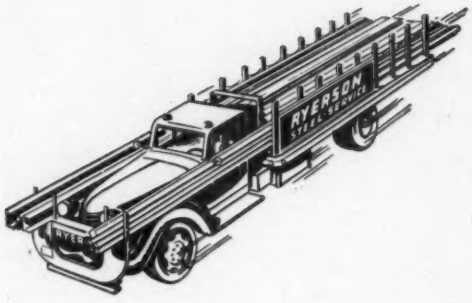
The storage of water in adequate amounts—and the citizens' committee recommends at least 70 to 90 million gallons—would cure another difficulty. This is a "roily" or cloudy water. With adequate storage, sediment would have an opportunity to settle and the water become clear. This roiliness is accompanied by excessive chlorinous tastes and odors. Adequate storage would provide greater control over the chlorination and would help overcome these difficulties.

The committee also recommended strengthening the distribution system by constructing a reservoir of higher elevation than existing storage points to increase the water pressure throughout the system. Certain sections are served by a pressure of less than 30 pounds per square inch.

The committee made specific recommendations for a dam site to construct a reservoir and supply the storage needs.

RYERSON

Ryerson Steel Service awaits your call at thirteen great plants, strategically placed across the nation.



STEEL

Every kind of steel is on hand for quick delivery. Though stocks are currently unbalanced, most requirements are usually available.

SERVICE

Ryerson representatives are ready to assist you on any problem involving the purchase, fabrication or application of steel.

PRINCIPAL PRODUCTS

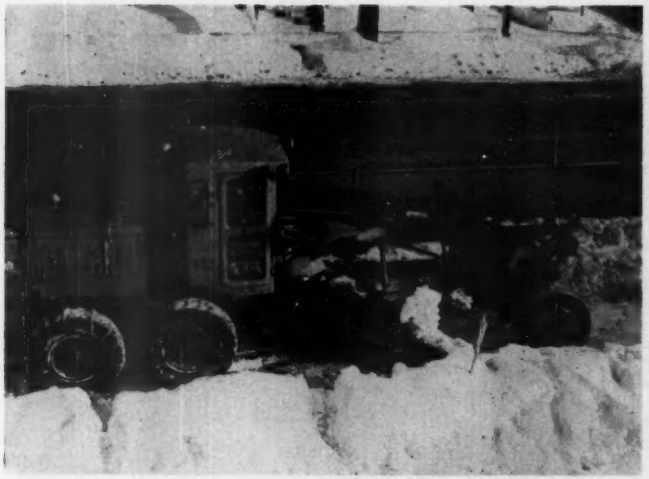
CARBON STEEL BARS—Hot rolled and cold finished
STRUCTURALS—Channels, angles, beams, etc.
PLATES—Many types including Inland 4-Way Safety Plate
SHEETS—Hot and cold rolled, many types and coatings
TUBING—Seamless and welded, mechanical and boiler tubes
ALLOYS—Hot rolled, cold finished, heat treated. Also tool steel
STAINLESS—Allegheny bars, plates, sheets, tubes, etc.
BABBITT—Five types, also Ryertex plastic bearings
MACHINERY & TOOLS—For metal fabrication

RYERSON CERTIFIED STEELS

Joseph T. Ryerson & Son, Inc. Plants at: New York • Boston • Philadelphia Cincinnati • Cleveland • Detroit • Pittsburgh • Buffalo • Chicago Milwaukee • St. Louis • Los Angeles • San Francisco

Street Cleaning and Snow Removal

Minneapolis' Worst Snow



If plowed snow proves difficult to pick up, Minneapolis, Minn., sends out its Caterpillar diesel No. 12 motor grader to windrow the snow. The city's Barber-Greene loader is then used to pick up the snow, a job no longer troublesome.

LAST season was one of our city's most difficult years in fighting the snow-removal battle. We had a snowfall of approximately 90 inches. In keeping open our 1,000 miles of streets and removing the snow from them, we had to spend approximately $700,000.

After snowfalls of 9, 10, or 12 inches, all streets were plowed within a period of 12 hours. In the latter part of the season the accumulation of snow made it necessary for us also to plow approximately 3,500 alleys.

We have 23 large patrol graders that form the nucleus of our snow-fighting equipment. These performed excellently under adverse conditions, with temperatures sometimes as low as 25° below zero.

HUGO G. ERICKSON
City Engineer
Minneapolis, Minn.

How Detroit Clears Snow from Its "Loop" District

DETROIT divides its 20-mile loop area into four districts and subdivides it further into 42 subdistricts. The total area requires 5 supervisors, 25 foremen, and 300 laborers.

From an equipment standpoint, the area is assigned 5 Ross truck displacement plows, 6 Burch salt spreaders, 10 Austin-Western graders, 1 Caterpillar bulldozer, 4 Lull front-end loaders, 2 Athey loaders, 1 Barber-Greene loader, 9 city trucks, and 60 hired trucks. All displacement plows are interchangeable and all equipment is fitted with fully enclosed cabs.

The city maintains close contact with the Weather Bureau and is frequently able to organize a half hour or more before a storm actually strikes or the temperature changes. In addition, night emergency crews patrol main arteries and hills and call the dispatcher at the first sign of slipperiness. If there is only a light snow or rain with freezing temperatures, only the salt trucks are called out. If additional snow is on the way, the rest of the organization is alerted. On a 2-inch fall of snow, all forces turn out.

Most inclement weather has been handled by spreading salt. Over the winter, however, the city can average six major storms that tax facilities for days at a time. The use of salt has eliminated ill-smelling frozen inlets or sewers.

The city is able to obtain salt from the International Salt Company, whose mines are only five miles from the city proper. It is delivered at a cost of $7.20 per ton on city trucks.

These details were given by Jan Schmedding, Superintendent of Street Construction and Maintenance for Detroit, at the recent American Public Works Association Congress held in that city.

To Clean Catch-Basins Annually In Cleveland Heights, Ohio

FOR cleaning the 3,500 catch-basins in Cleveland Heights, Ohio, we have a 2½-ton White dump truck which has a space of about 3 feet between the cab and dump section in which is located a winch and allied equipment for the operation of the cleaner. This equipment consists of a power take-off operating the winch, clutch, accelerator, and other devices. The boom swing is hydraulic, and the pick-up device is a Hayward Orange-Peel bucket with cable operation similar to a clamshell principle. The bucket dumps directly into the body of the truck and, when the body is full, the complete unit proceeds to the dump to discharge its load.

The operation of the equipment is in general satisfactory, except that it is rather slow. This is not a commercial design but is a special set-up originated by a member of our department in conjunction with an industrial firm about four years ago, when the city started a comprehensive catch-basin-cleaning program. Since then, the catch-basins have been cleaned once every two or three years. At present, we are attempting to organize a crew so that the basins may be cleaned each year. The contents consist generally of ordinary street dirt, leaves, and gravel. The gravel originates from two sources; one is from the gravel spread on the streets during the winter, which eventually finds its way into the catch-basins before we begin our spring clean-up, and the other is debris from street resurfacing which cannot be entirely picked up. We also find larger rocks, sticks, and papers in the basins.

ROLAND N. BARTON
Commissioner of Service
Cleveland Heights, Ohio

The right combination

FOR ANY WATER SUPPLY JOB

Layne offers you the right combination of unmatched experience plus modern equipment for installing well water supply units of any size—and for any purpose. Layne has made more water supply installations than any other firm in the entire world, and this valuable experience places Layne in a position to unquestionably do every job exactly right. Once the installations have been made, a complete record of everything is kept; strata formation, sand porosity, casing details, sand screen length, diameter and metal used, all pump information including bearings, shafting, impellers and operating characteristics. With such information, Layne is always in a position to give quick and most economical service for adjustments or repairs if and when needed.

Layne made the above well and pump installation to secure a constant and economical supply of cooling water for a large gasoline refinery.

When completed the above pictured well flowed more than 2 feet above the casing. With the installation of a Layne pump, the production was 1200 G.P.M.

Everything by Layne

Layne accepts your contract for furnishing everything; Layne supervision, Layne drill crews, Layne drill equipment, Layne designed and Layne built louver type sand screen and Layne high efficiency vertical turbine pumps. No other firm is involved, therefore there is no divided responsibility. This plan gives you the very finest well water supply units that world wide experience and skill can possibly build.

LAYNE & BOWLER, INC.
General Offices, Memphis 8, Tenn.

LAYNE CATALOGS

Layne offers a wide range of fully illustrated catalogs covering every phase of well water installations, pumps, well cementing and sand screens. Your request for any will be answered promptly.

Layne
WATER SUPPLY
WELLS & PUMPS

Sewerage and Sewage Treatment

Pittsburgh to Concentrate and Incinerate Raw Sludge

CONCENTRATION vacuum filtering, and incineration of the raw sludge, appears to be the most economical method of sludge disposal in the proposed sewage-treatment plant for the Allegheny County Sanitary Authority, according to J. F. Laboon, Chairman of the Authority Board, in a paper presented before the American Public Works Association at its annual Congress held recently in Detroit.

Mr. Laboon's paper cited 13 different methods of sludge disposal and presented comparative costs of five. Lagooning of the raw sludge, Mr. Laboon reported, presents a cheap method, but runs the risk of odor nuisances. Lagooning of digested sludge is practiced successfully in Canton, Ohio, where the digested sludge flows onto farm land. Chicago, Indianapolis, Houston, and Rahway, N. J., have practiced lagooning raw sludge.

Alternate Methods

Barging of sludge to sea, not practical in Pittsburgh, has an uncertain price picture. New York City, he reports, faced a cost of about 18 cents per wet ton in 1948. Elizabeth, N. J., paid 32 cents per wet ton in 1940, and Newark, N. J., had a pre-war contract price of 19.44 cents per wet ton.

Digestion and dewatering on drying beds, used frequently in small plants, is simple but not particularly applicable in large cities, he found, because of the area involved and the possibility of odors from the beds. So as an alternate, he discussed the possibility of digestion and mechanical dewatering with either incineration or dumping; and raw-sludge concentration and incineration. If the use of the gas for power production appears important along with the reduced amount of sludge to be handled, then digestion becomes significant. Mr. Laboon listed the Minneapolis-St. Paul sewage-treatment plant as an important example of sludge incineration without the use of digesters. Detroit, he noted, digests only 25% of its sludge and uses incineration for final disposal. Other incineration plants are operating at Buffalo, Cleveland, and Columbus. Washington, D. C., Toronto, and Akron, along with Pittsburgh, plan sludge incineration.

The Pittsburgh plant will have a capacity of 150,000,000 gallons per day. Estimates of the use of digester gas for power production have not shown its economy when matched against the cost of power in the area. The plant is expected to produce a 50% reduction in BOD by the use of bar racks, aerated grit chambers, 45-minute pre-aeration, two-hour sedimentation, and pre- and post-chlorination.

The sludge-concentration step represents the results of experimental work conducted by the Allegheny County Sanitary Authority under Mr. Laboon's direction. It takes advantage of the fact that during the first five days of digestion, carbon dioxide is generated that lifts the sludge to the surface. The "subnatant" then can be drawn off, leaving the concentrated sludge at about 20% solids. This can be pumped by a Moyno cavity-type pump (a product of Robins and Myers, of Springfield, Ohio) to vacuum filters, if desired, or directly to the incinerator.

How to Oxidize Phenols with Chlorine

PHENOLS can be oxidized with chlorine. The cost is not prohibitive provided the volume of sewage is low—not exceeding 100,000 gallons daily with a phenol content of not more than 200 ppm. Chlorine can handle wastes with phenol contents higher than 200 ppm if the volume is limited to a few thousand gallons daily. The chlorine demand of the waste other than the phenol demand should be kept at as low a degree as possbile at the particular plant.

These findings were reported by A. E. Griffin and N. S. Chamberlain at the recent annual meeting of the Federation of Sewage Works Associations, held in St. Paul.

Ohio River Commission Sets Pollution Limits

IN ORDER to establish a guide for the treatment of water-borne wastes, the Ohio River Valley Water Sanitation Commission has adopted these bacterial-quality objectives:

Water Supply Uses: The monthly arithmetical average "most probable number" of coliform organisms in the waters of the river at water intakes should not exceed 5,000 per 100 milliliters in any month; nor exceed this number in more than 20% of the samples of such waters examined during any month; nor exceed 20,000 per 100 ml in more than 5% of the samples examined.

Recreational Uses: For bathing or swimming waters, monthly arithmetical average "most probable number" of coliform organisms should not exceed 1,000 per 100 ml during any month of the recreation season; nor exceed this number in more than 20% of the samples examined during any such month; nor exceed 2,400 per 100 ml on any day. For non-bathing or non-swimming waters, the monthly arithmetical average "most probable number" of coliform organisms should not exceed 5,000 per 100 ml in any month of the recreational season, nor should exceed this number in more than 20% of the samples, examined during any such month.

Booklet of Objectives

These bacterial-quality objectives for the Ohio River are summarized in a booklet issued by the Ohio River Valley Water Sanitation Commission. Copies of the booklet can be obtained by writing to Edward J. Cleary, Executive Director and Chief Engineer, 414 Walnut St., Cincinnati 2, Ohio.

Safeguard OUR NATION'S INDUSTRY

Dependable fire protection for defense and civilian industries is vital, and the fire signaling system is the first line of defense against fire. Insist on GAMEWELL Fire Signaling Equipment — it has proven reliable, efficient, and durable.

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Public Safety

Local Associations of Cities' And Industries' Fire Chiefs

TODAY'S civilization is served by many complex industries whose unusual processes are often attended by hazards well beyond the unaided capabilities of the municipal fire department. A movement of great interest and value, in this connection, consists of the organization of local fire chiefs' associations that include the fire chiefs of principal industrial plants in the locality.

One of these is the Sabine-Neches Fire Chiefs Association, which includes the Texas cities of Port Arthur, Orange, Beaumont, Port Neches, Nederland, and other communities in a 60-mile radius. Formed two years ago, it is open to all cities' and industries' fire chiefs in the area at no cost to any one of them. G. T. Shuster, Safety Supervisor of the Naugatuck Chemical Division synthetic-rubber plant of the United States Rubber Company at Port Neches, Texas, advises that lunch meetings are held once a month at various host cities or plants. The main event is a two-hour discussion of a recent fire, reported by the fire chief involved.

Civil Defense Angle

The Port Arthur–Orange–Beaumont area has been set up into zones with the various industries being cataloged as to zone. The program is controlled by short-wave radio through the central fire stations of the three above-mentioned towns.

We have also [says Mr. Shuster] worked out a set of code figures known only to the Sabine-Neches Fire Chiefs and their supporting subordinates whereby we may set up road blocks, call for ambulances, or ask for most any other type of assistance pertaining to an incident. State, county, and city radio-controlled cars manned by law-enforcement officers come under the control of this program.

It is my opinion that the mutual-aid program is one of the most detailed and workable programs *anywhere in our country*, and fits very nicely into the civilian-defense program recommended to us by the 4th Army Command regarding atomic-bomb attack, sabotage, mob psychology, and plant protection.

The 4th Army Command recently inspected the Sabine-Neches area in which our plant is located. Certain recommendations were made for plant protection, major disaster, and civil defense. Three plants—the Neches-Butane Chemical Company, B. F. Goodrich Chemical Company, and ourselves—met with the Director of Civilian Engineering Extension Courses at Texas A & M College for the purpose of working out a course in atomic-bomb-attack defense, probable extent of damage, methods to be used for caring for the injured, and ways and means of combating fires and sabotage, taking into consideration community and employee problems.

Our program consists of two hours on atomic bombing, six hours on fire prevention and control, six hours on plant-protection policies, techniques, etc., and six hours on sabotage. This, of course, will be tied into the civil-defense programs wherever necessary.

An example of need for knowledge of specialized hazards was furnished by a liquid-petroleum fire at a propane-storage plant in Newark, N. J., in July, 1951. The plant had 100 tanks, 70 feet long and 10 feet in diameter, of 1-inch-thick steel. By an odd coincidence, Newark's Fire Chief and his assistant were having lunch with the plant engineer on a tanker alongside this plant when 70 of the 100 tanks exploded. The Fire Chief's alarm, sent immediately by radio, was one of 16 alarms initiated by this fire. The municipal fire department responded. The apparatus remained on the edges of the disaster area and devoted their efforts successfully to preventing other fires.

Cities, utilities, and industries are apprehensive about the storage of LP gas and the existence of hazards in complicated manufacturing processes. Local fire chiefs' association will be most welcome.

Call Firemen by Radio in Village of 6,500

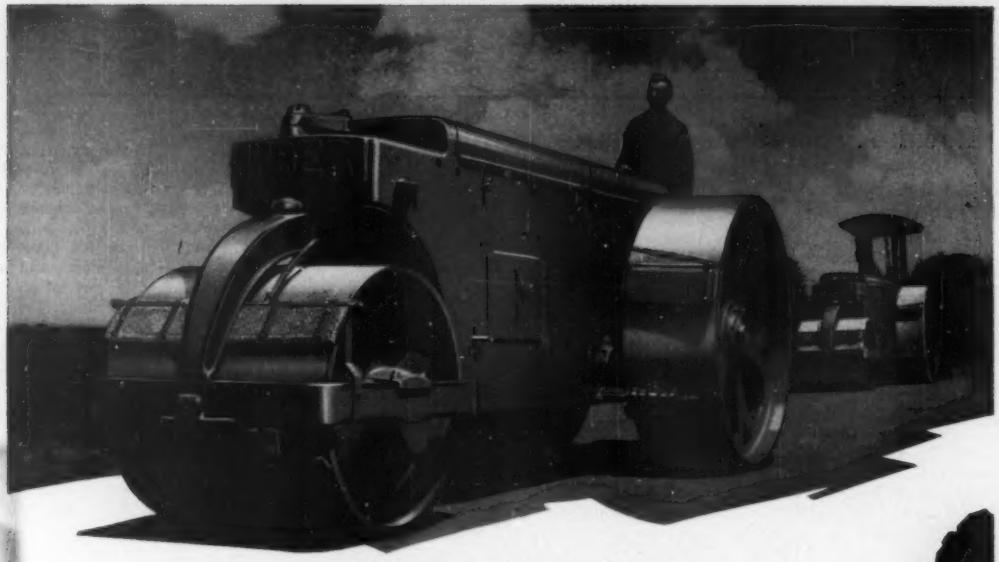
One of Oberlin's volunteer firemen, Arthur Salo, gets ready to answer an alert.

VOLUNTEER firemen in Oberlin, Ohio, are instantly alerted and receive instructions via a new FM-radio receiver, tuned to the frequency of the village police two-way radio system. A selective dispatching device developed by the General Electric Company's Electronics Department, at Syracuse, N. Y., prevents the receivers from acting on police department calls.

When a fire is reported to the police radio dispatcher's office in the village hall, the dispatcher alerts all 27 firemen and the village police cruiser.

Village officials, as well as Fire Chief Clarence Van Ausdale, are enthusiastic about the possibilities for using the new radio system for alerting key personnel in civil defense and any peacetime disaster. As many as 10 agencies like the volunteer firemen can be contacted individually from a single two-way radio transmitter, through use of the new selective-dispatching equipment.

Oberlin eventually plans to equip its public-utility vehicles with two-way radio, tying them into the selective-dispatching system. Men in these vehicles would not hear messages broadcast from police headquarters unless their special call button were pushed.



Solve Compaction Problems

EFFICIENTLY, QUICKLY, DEPENDABLY

With

HUBER *GENERAL - PURPOSE* 3-Wheel ROLLERS

8-10-12-14 TONS • GASOLINE-DIESEL

Since Huber pioneered the "automotive-type" roller in 1923, it has led the industry in the refinement of these versatile machines. Huber has made 3-wheel rollers truly general purpose machines.

FOR GRADE WORK, the Huber 3-wheel is widely used for compaction of earthworks, embankments, sub-grades, trenches and insulation courses. These rollers usually are equipped with 18" face rolls on the 8-ton units, and 20" face rolls on the 10, 12, 14 ton sizes to gain maximum compaction per lineal inch.

FOR FINISHING, Huber 3-wheel rollers normally are equipped with the wide face rear rolls where high compression per lineal inch is not required and the wider rolling width is desirable. They are in wide use for rolling water bound macadam, surface treatment, sheet asphalt and ahead of tandems on asphaltic concrete and other bituminous mixtures.

For more information about Huber GENERAL PURPOSE 3-wheel rollers, ask for our new 20-page bulletin, No. H-150.

HUBER MANUFACTURING CO. • Marion, Ohio, U. S. A.

Manufacturers of Huber Maintainers, Graders and Complete Line of Rollers

HUBER

Refuse Collection and Disposal

Why Modern Refuse Trucks Pay Off

I. J. CASEY, Town Engineer of Irvington, N. J., made his new Roto-Pac refuse truck bodies prove themselves before he put them into use. The proof consisted of establishing a weighing station and weighing every load. The figures he compiled are shown here:

	Open Trucks	*Roto-Pac*
Capacity	26 cu. yds.	15 cu. yds.
Unit Weight Per Cu. Yd.	215.3 lbs.	476.4 lbs.
Labor Needed	4 men	3 men
Time Per Load	2¼ hrs.	2¼ hrs.
Lbs. Per Man Hrs.	614	1,081

The Roto-Pac truck, a product of the City Tank Corporation, of Long Island City, N. Y., uses a continuous-feed, escalator-type loading mechanism with an internally mounted packer plate to insure good compaction of the load.

Mr. Casey gave this information at the recent American Public Works Association Congress held in Detroit.

Wheeling, W. Va., Establishes Refuse Collection Fee

IN WHEELING, W. Va., each family now pays one dollar per month to get its refuse hauled away. This fee represents a 100% increase and will pay for new sanitation equipment and generally improve the service, according to Robert L. Plummer, City Manager.

An attempt was made to submit this increase to a referendum of the voters. But the petition submitted to Council fell short by more than 800 signatures of the 10% of voter registration as provided by law governing service charges, and the new rates are now in effect.

What Garbage Grinders Do to Septic Tanks

IF ONE can be sure that a new septic tank will be cleaned at intervals of five years or less, present recommended tank capacities should suffice. If one cannot be sure of this, the tank capacity should be increased 50%, which is the equivalent of increasing scum and sludge storage volumes 100%.

In existing systems, if a food-waste grinder is installed, the best practice is to operate the septic tank as constructed, until sure that added capacity is required. Such septic tanks probably will have to be cleaned at more frequent intervals. When a tank is cleaned, sufficient sludge, about 5% of liquid capacity, should be left in the tank to act as seeding material.

These are recommendations in Technical Bulletin No. 17 issued by the Housing and Home Finance Agency, Washington 25, D. C. The report and recommendations were prepared by Fred W. McGhan, Division of Housing Research, HHFA.

Hotel Saves $90 a Month By Grinding Garbage

IN estimating our garbage-disposal cost, using a Jeffrey Garbridder, we find that a saving of approximately $90 per month was made over the cost of our former method, which was by contract with city truck removal. We also notice a saving in garbage-can replacement which was not included in the above estimate.

From a sanitation standpoint, much improvement was brought about. Our Garbridder was installed on the same floor level as our kitchen, which eliminates any floor-to-floor transfer. In our former removal plan, this presented a problem at times.

We have had no mechanical trouble with the equipment and have replaced the knives only once in a year's operation. Our garbage is raked before it is put into the machine, thus offering opportunity to reclaim silver, dishes, and the like. This saving itself amounts to quite an appreciable sum over a period of time.

W. R. LIPPINCOTT, *Manager*
George Washington Hotel
Washington, Pa.

Trichinosis Incidence Drops with Fewer Garbage-Fed Hogs

APPARENTLY, the Trichinella spiralis worms are having more difficulty finding their way into the human intestinal tract. A study by Dr. Rodney R. Beard, of San Francisco, reported in the American Medical Association *Journal*, showed that he found the incidence of trichinosis reduced by as much as two-thirds since 1936. A random sampling made in that year of 200 diaphragms taken at autopsy showed 24% infection. A more recent study of 161 diaphragms, also a random sampling, showed only 8%.

Dr. Beard expressed his opinion that the reduction in the proportion of pork from garbage-fed hogs was an important factor. More strict attention to the adequate processing of pork products that has ensured killing the trichinae also has been responsible for the reduction.

Dr. Beard listed symptoms of trichinosis as diarrhea, nausea and fever, followed by stiffness, swelling muscles, sweating, and insomnia. Severe infections may cause death.

ADAMS MOTOR GRADERS

Build New Streets Faster, Easier

In hundreds of cities and towns, the country over, Adams Motor Graders are saving time and money on all types of projects . . . building, rebuilding and maintaining city streets and alleys backfilling over sewers, water mains and gas pipes —leveling playgrounds, parks, parking areas, etc. . . . You'll find in the Adams line a model with the right power and right capacity to meet individual needs exactly. Ask your local Adams dealer for complete information on the machine best suited to your requirements.

J. D. ADAMS MANUFACTURING CO. • Indianapolis, Ind.

ONLY ADAMS OFFERS ALL THESE OUTSTANDING ADVANTAGES

- 8 Overlapping Forward Speeds
- High Arch Front Axle for Clearance
- Push-Button Starting from Cab
- Positive Mechanical Controls
- Wide Range of Blade Adjustments
- Exceptional Blade Clearance in All Operating Positions
- Balanced Weight Distribution
- Easy Access for Fast Servicing
- World-Wide Dealer Service

Make your next motor grader an **Adams**

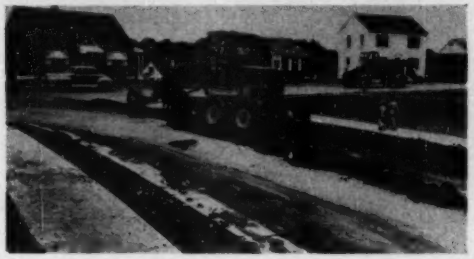
Street Construction & Maintenance

How Roanoke's Street-Improvement Program Works

STREET-improvement operations follow a practical pattern in Roanoke, Va. We first establish street grades in areas where new streets are required, then lay an 8-inch sanitary sewer and a 6-inch water main. This is followed by the construction of concrete curb-and-gutter, usually by contract. At that point, the street is ready for paving.

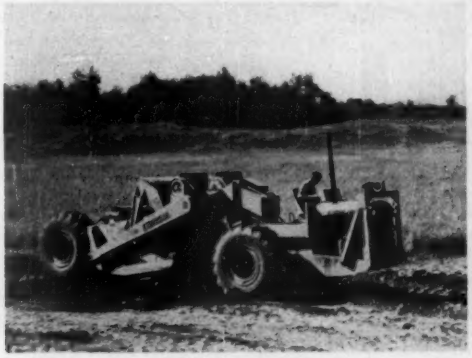
In most cases we can lay a "flexible base" type of pavement. By using an Adams motor grader and an Adams loader, one foreman, two laborers, and the necessary trucks, we can take out the subgrade quickly, and meet the required grade elevations. We then place an 8-inch rock base and cover it with a bituminous wearing course to complete the work.

J. L. WENTWORTH
Director of Public Works
Roanoke, Va.



In the first step in Roanoke's program, a grader windrows the excess subgrade material.

Secondly, a loader picks up the excess material to be hauled away from the street.

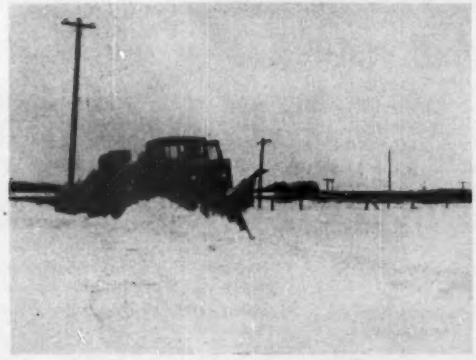


The Model D Le Tourneau Roadster unloads some fill to help widen country roadway.

Same Equipment Used Winter and Summer

IN LADYSMITH, Wis., Rusk County Highway Department officials make use of their Model D Roadster Le Tourneau Tournapull the year around., In the summer it is used on various road-maintenance jobs, and drives to these jobs under its own power. In one of the accompanying photographs it is shown widening and cutting a new roadway. On this job it excavated and hauled over 60 cubic yards per hour, on a 1,000-foot round trip over a rough-haul road.

Last winter the Roadster equipped with a snow plow cleared county roads and farm lanes. In soft, wet ground with the temperature slightly above freezing, it averages 1 minute 50 seconds to clear lanes with an average length of 217 feet.



In winter, the Roadster, with attached snow plow, clears a country lane.

Next Month
Don't Miss

"St. Paul's Rubberized Streets": a discussion of the way George Shepard, St. Paul's widely known City Engineer, has incorporated a rubber mixture into his asphalt-paving program.

of all low-cost graders and maintainers

Only the Allis-Chalmers Model D...

has Tandem Drive, other Big Grader features

The Model D is engineered from the ground up as a motor grader — with no compromises. It is streamlined and completely functional, without the objectionable features and handicaps of a converted machine.

Tandem drive — with four ground gripping contacts instead of two — gives the Model D greater driving power and stability, smoother blading. Its other BIG GRADER design and performance advantages include: **Tubular Frame — ROLL-AWAY Moldboard — Hydraulic Controls — Engine Over Drive Wheels — More Clearance — Long Wheel Base — Simple Power Train — Fully Visible Blade** — Comfortable seat, "clean" platform.

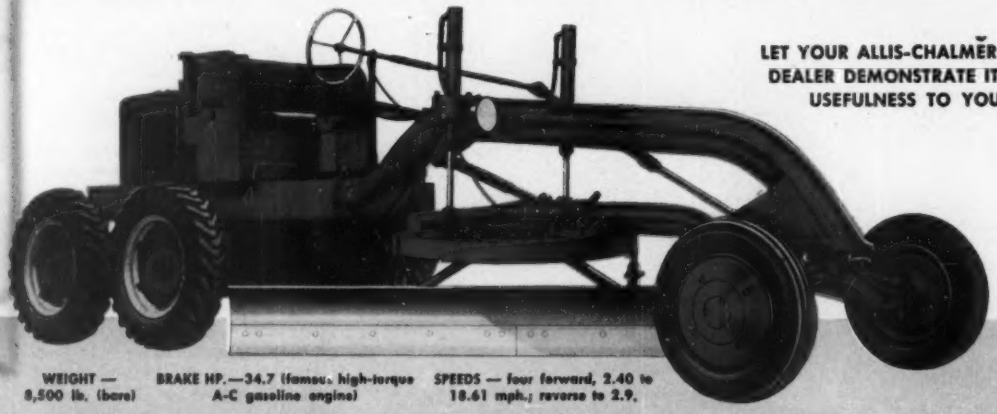
ROLL-AWAY is an Allis-Chalmers trade-mark.

does so many jobs — so well

On both construction and maintenance, the Model D is an all-round, year-round machine. — And with its big grader features, it does outstanding work on every job. The D's usefulness is further multiplied by these easily mounted, matched attachments: Rear-End Loader, Scarifier, Blade and V-Type Snowplows, Windrow Eliminator . . . All-View Cab, Heavy-Duty Front Tires, Other Accessories.

By performing a wide variety of jobs, the Model D releases larger graders for heavier work — effecting important economies. It operates economically, too — runs all day on a tank of gasoline. — And a price one-third that of large graders makes the Model D the biggest value of all!

LET YOUR ALLIS-CHALMERS DEALER DEMONSTRATE ITS USEFULNESS TO YOU.



WEIGHT — 8,500 lb. (bare) **BRAKE HP.—34.7 (famous high-torque A-C gasoline engine)** **SPEEDS — four forward, 2.40 to 18.61 mph.; reverse to 2.9.**

ALLIS-CHALMERS

TRACTOR DIVISION — MILWAUKEE 1, U. S. A.

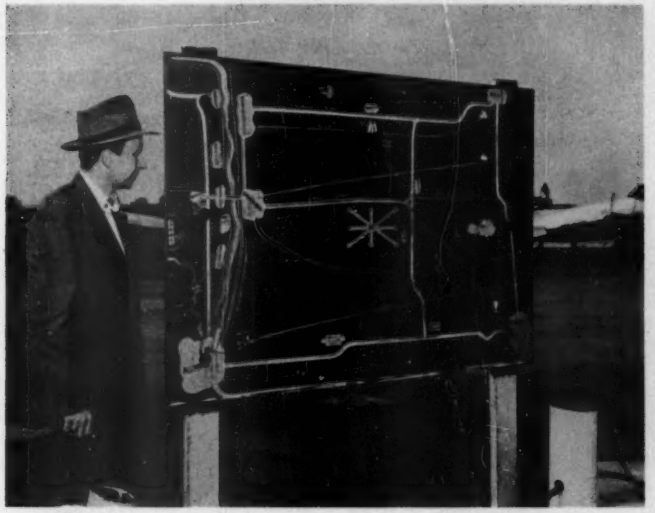
handles ALL jobs for some users

... SOME jobs for all users

- Handles light construction and terracing, strips sod.
- Maintains roads and streets. Windrow eliminator feathers out windrow.
- Finishes between forms, levels subgrade, landscapes.
- Cuts and cleans ditches, builds up shoulders, slopes banks up to 2:1.
- Scarifies toughest surfaces, mixes and spreads oil mix.
- Clears snow with V-type or blade plow, windrows it with regular blade.
- Maintains access roads, park drives, parking lots, playground areas.
- Loads sand, snow, any material. Cleans up debris.

Airports and Aviation

Flight Area Map Aids Visiting Pilots



Wiley Post and the flight area map that has proved so successful.

HERE'S how airport managers can help visiting pilots and students who are not familiar with the airport surroundings, approaches, practice areas, etc. This flight-area map is mounted outside the flight-operations office at the Allentown-Bethlehem-Easton, Pa., airport, in a correct position relative to the field. It consists of a 4-by-6-foot heavy slate mounted on two 6-inch channel irons.

All main roads, landmarks, towns, rivers, restricted areas, etc. are clearly painted on one side of the slate. Also included are the various practice areas and zones—all to a scale of about 1 foot to 1½ miles.

On the back side of the slate is an aircraft flight-schedule which shows at a glance which of the company's planes are rented and which are available for use.

Airport Manager Wilfred (Wiley) Post, Jr., pictured with the flight-area map, says that it is especially helpful to new students and itinerants who are planning to practice for flight tests. It has been in successful use at the Allentown-Bethlehem-Easton airport for a number of years.

Some Significant Facts About Airport Pavements

AIRPORT pavements do not fail suddenly. Pavement failures develop as a result of time and usage.

Information about airport-pavement performance is valueless unless accompanied by a description of subgrade-soil conditions. For each wheel loading there is a different thickness of pavement required for each condition of subgrade.

The greatest load on the airport pavement exists when the plane is parked and the propellers are not turning. The load drops when the plane is standing and the propellers rotate at high speeds. The load decreases as the plane begins to taxi and continues to decrease as the plane becomes airborne. The effect f impact on a normal landing can be ignored.

Taxiways, aprons, turn-arounds, and warm-up pads at ends of runways are the most critical areas from the standpoint of aircraft use. This results from the numerous repetitions of loads caused by channelization of traffic on these critical areas.

Both flexible and rigid pavements have turned in satisfactory service records on airports.

Turbine-powered aircraft, subject to fuel spillage and high exhaust temperatures, introduce new factors. However, dense-graded asphaltic concrete offers excellent resistance, and the use of tar in bituminous mixtures and in seal coats make them even more resistant. Bituminized rubber compounds seem to give the best service as joint-sealers in rigid pavements.

Jet blasts still appear to be troublesome. However, the areas affected are small and almost entirely confined to locations where power checks are made. Here the pavement is subjected to sustained blasts of 5 to 10 minutes' duration. This has caused serious erosion of bituminous pavements and has blasted out the sealing material in the joints or rigid pavements. Except for short sections at the ends of runways and on taxiways where the aircraft enter the runway, there is no damage whatever to runway and taxiway pavements. Even at these locations the defects are minor.

These conclusions were presented by Henry Aaron, Chief, Paving and Soils Branch, Civil Aeronautics Administration, at the recent annual meeting of the American Road Builders' Association held in Milwaukee.

Lima, Peru, Airport Gets New Approach Lighting System

A NEW, high-intensity lighting system is being installed in the Lima, Peru, Limatambo Airport, midway point in Panagra's South American operations.

Ordered by Panagra (Pan American Grace Airways), the equipment is being built at Westinghouse plants at Cleveland, Ohio, and East Pittsburgh, Pa.

The new approach-lighting system is needed, because during the winter heavy clouds often seal in the Lima area and create serious visibility problems.

The installation will include 29 stations, each utilizing as many as ten 80,000-candlepower lights to guide the planes onto a 6,000-foot runway. Because of the terrain, the lights will be mounted on poles in graduated heights up to 50 feet.

The installation will also include a five-level brightness-control system, airfield distribution equipment, and emergency power-generating and switchgear equipment.

EFFICIENCY UP...

Photo Courtesy Schramm, Inc.

COSTS DOWN

...when you use Texaco air compressor oil

EFFICIENT, economical air compressor operating requires an oil that is *exactly right* for your particular operating conditions. To meet this requirement you have only to use the recommended Texaco air compressor oil. A Texaco Lubrication Engineer will gladly help you.

—Under normal conditions, a Texaco *straight mineral* air compressor oil will assure clean operation, minimum wear, lower maintenance costs.

—Under conditions causing rust in cylinders, coolers, lines and receivers, a Texaco *rust-inhibited* air compressor oil will keep compressors and systems rust-free whether running or not.

—Where service conditions are extremely severe, a Texaco *heavy-duty* air compressor oil will prevent harmful formations of carbon and sludge.

—To combat excessive wear under "wet cylinder" conditions, a Texaco *compounded* air compressor oil will keep wear at a minimum.

Call in a Texaco Lubrication Engineer. Let him tell you about the Texaco Simplified Lubrication Plan that will let you handle *all* your major lubrication with *only six* Texaco Lubricants. A time-saving, cost-saving set-up. Just call the nearest of the more than 2,000 Texaco Distributing Plants in the 48 States, or write The Texas Company, 135 East 42nd Street, New York 17, N. Y.

LONGER DRILL LIFE, more footage drilled, lower costs — count on these benefits when you use *Texaco Rock Drill Lubricant EP.* This series of "extreme pressure" lubricants give full protection against wear, guard against rust whether drills are running or idle.

TEXACO

TEXACO Lubricants and Fuels

FOR ALL CONTRACTORS' EQUIPMENT

TUNE IN . . . TEXACO STAR THEATER starring **MILTON BERLE** on television every Tuesday night. **METROPOLITAN OPERA** broadcasts every Saturday afternoon.

Get What You Want—No Charge!

Please check over the list of interesting free catalogs on this and following pages. To obtain the literature you want, write directly to the manufacturers at the addresses given. If you prefer, you may circle the identifying numbers on this coupon and mail to THE AMERICAN CITY, *470 Fourth Ave., New York 16, N. Y., and we will see that catalogs are sent to you without expense or obligation.*

12/51

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Name ..... **Position** .....

Address .....

Multi-Purpose Sweeper

200 The Wilshire Model 1000-M is a compact multi-purpose power sweeper which vacuums as it sweeps, provides complete visibility, and is easy to maneuver, according to the Wilshire Power Sweeper Co., 526 W. Chevy Chase, Glendale 4, Calif. Available in two sizes, 36 and 48-inch sweeping widths, the machine has a special roller guide over the gutter brush that lets the machine sweep close to the curb or wall while protecting the gutter brush.

Tax Equalization For Municipalities

201 Public appraisal service is provided by The J. M. Cleminshaw Co., Union Commerce Bldg., Cleveland, Ohio, which will send an illustrated descriptive folder on request. The company specializes in revaluating real estate, personal property, and public utilities for local tax equalization purposes.

Snow-Removal Instructions

202 A new *Snow Fighting Instruction Bulletin* has been issued by the Walter Motor Truck Co., 1001-19 Irving Ave., Ridgewood, Queens, L. I., N. Y. The publication gives the equipment requirements of its snow-fighting machine, discusses how to promptly and efficiently clear snow from airports and highways, and how to handle light, normal, and deep snow.

Loads, Digs, Breaks, Tamps, Backfills

203 On request, the Le Roi Co., Milwaukee 14, Wis. will supply literature on describing its Tractair, a 105-cfm air-powered loader, which has a 35-hp engine. The self-propelled machine handles pavement breaking, clay digging, drilling, tamping, as well as loading, lifting, backfilling and snow plowing. It has 8 quickly interchangeable accessories.

All-Steel Clamps For Wood Curb Forms

204 The Pacific Engrg. Sales Co., 215 W. Fifth St., Los Angeles 13, Calif., has prepared a folder on its all-steel clamps for wood curb forms. Among features of the equipment are; one set of clamps which handles all curb jobs, face forms that are removable without disturbing concrete that stay true to line, grade, and shape, and are easy to install, adjust, and remove.

Air-Contamination Warning

205 Information on Aerovane and Windial for civil defense installations may be obtained from the Instrument Division of the Bendix Aviation Corp., 1360 Taylor Ave., Baltimore 4, Md., which points to the dangerous elements which are left in the air after an atomic bomb strikes. Bendix-Friez wind equipment determines safe areas and directions for evacuation.

Transformers to Operate Mercury-Vapor Lamps

206 Bulletin 521-5, issued by the Jefferson Electric Co., Bellwood, Ill., will supply literature describing transformers that start and operate mercury-vapor lamps. The manufacturer states that its equipment insures proper control of the current characteristics, and is sufficiently flexible so that the same transformers may be used for mounting on a wall or pole; all multiple-circuit transformers have three primary voltage taps to closely match the line voltage for best possible lamp operation.

Civil Defense Cots

207 Any type of injury can be handled when using the new maneuverable one-attendant Collapsi-Cot, reports the Emergency Aids Co., 3444 N. Clark St., Chicago 13, Ill. It is a combination stretcher and transfer chair, weighing 23 pounds, and can be employed to convert police cars or panel delivery trucks into emergency ambulances.

Compressor Delivers 105 Cubic Feet Per Minute

208 The Smith Model 105-P air compressor delivers 105 cubic feet per minute, according to Gordon Smith & Co., Inc., 425 College St., Bowling Green, Ky. Portable, it combines heavy duty with light weight, is powered with a Chrysler industrial engine, 6 cylinder, 4-inch bore, 5-inch stroke, that gives heavy-duty service despite its light portability.

Investment Bond Distributor

209 Full details on its services as an investment bond underwriter and distributor may be obtained by writing to Halsey, Stuart & Co., Inc., 123 S. La Salle St., Chicago 90, Ill., or 35 Wall St., New York 5, N. Y. The company reports that it is able to aid the fund trustee in filling his requirements as to bond maturities, quality, and quantity.

New Fire Hydrant

210 Darling's new B-50-B fire hydrant is a packless, dry-top device which is ball-bearing operated. There is no need for a stuffing box since its design uses "O" ring seals. The Darling Valve & Mfg. Co., Williamsport 10, Pa., has prepared Bulletin No. 5007 on its equipment.

Lawn Mower Sharpener

211 The Modern lawn mower sharpener economically and quickly sharpens all municipal mowers, reports the Modern Mfg. Co., 160 N. Fair Oaks Ave., Pasadena 1, Calif. Priced at $241.50, less motor, it features handles, wheels, roller, and motor which remain in place when sharpening is in process. Bulletin No. 25B is available by writing to the company.

Warning Sirens

212 Bulletin 301 on its Class "Q" Super Power sirens is available from the Federal Enterprises, Inc., Signal Division, 8700 S. State St., Chicago 19, Ill., which states that its 9¼-inch rotor is powered by a new motor which produces greater sound volume with less current than any smaller sirens. Model "Q-2" is for outside mounting, and "Q-1" for concealed mounting. Electric brake is optional and there is a choice of 6 or 12 volts.

Meters Eliminate Small-Change Problem

213 Vendo coin changers eliminate the small change problem, states The Vendo Co., 7400 E. 12th St., Kansas City 3, Mo., for they supply a constant source of nickels. Easy to operate, the equipment is completely mechanical, and 15½ inches tall by 11½ inches wide.

Explosion-Proof Motors

214 U. S. Electrical Motors, Inc., 200 E. Slauson Ave., Los Angeles 54, Calif., produces total explosion-proof and totally enclosed motors. Explosion-proof motors may be obtained for use with highly inflammable gases and volatile liquids, or for combustible dusts. Many of the non-explosion-proof motors are protected against chemicals, non-combustible dust, and moisture.

(Please turn to Page 27 for more Bulletins)

Impact Insurance Against

1—LOSS OF FIRE PROTECTION.

2—EXCAVATION AND PAVEMENT REPLACEMENT.

3—COSTLY REPAIRS INVOLVING MAJOR HYDRANT COMPONENTS.

4—FLOODING.

The Smith Protectop Hydrant is designed to permit rapid return to service at minimum cost when a Hydrant is damaged as a result of a traffic accident.

The Protectop Hydrant Standpipe and Valve Stem are equipped with *Special Couplings* located just above the ground. The Couplings withstand operating pressures and ordinary impact with an ample factor of safety. Under excessive impact occasioned by traffic accidents the Couplings fracture at the design points thus minimizing the damage and permitting speedy return to service at low cost.

All Smith Hydrants are equipped with *Compression Type Valves* which definitely eliminate flooding since the line pressure holds the Valve against its seat in the closed position.

Write for details.

35

FIRE HYDRANTS · VALVES · SINCE 1896

THE A.P. SMITH MFG. CO.

EAST ORANGE, NEW JERSEY

Which Catalogs Interest You?

Write directly to the manufacturers or use the coupon on page 25

Elevated Water Tank Service

215 The Dixie Tank & Bridge Co., 3523 Lamar Ave., P. O. Box 14, Memphis 1, Tenn., provides service for elevated water tank maintenance. It states that its welding method of repairing seams, rivets, and pits adds tensile and structural strength to the tank for public safety. For full details, write the company.

Mobile Mixing Unit For Street Maintenance

216 Bulletin MP-51 on the Moto-Patcher, a mobile mixing unit for road and street maintenance, may be obtained by writing to Hetherington & Berner, Inc., 737 Kentucky Ave., Indianapolis 7, Ind. The machine delivers up to 10 tons per hour of freshly mixed material. According to the manufacturer, the equipment's 400-gallon tank assures an adequate supply of bitumen for uninterrupted production, making frequent stops unnecessary.

Fire Service Meter

217 The Hersey Mfg. Co., South Boston, Mass., reports that it produces a detector meter which already is used on the fire services of most of the large plants in the country. On request, it will furnish information on this product, as well as on compound water meters in sizes from 2 to 6 inches.

Diesel, Dual Fuel And Gas Engines

218 The National Supply Co., Engine Division, Springfield, Ohio, produces diesel, dual fuel, and gas engines. Superior and Atlas engines meet your requirements in sizes up to 1,500 hp. Bulletins on this equipment may be obtained by writing the manufacturer.

Crane for Laying Pipes

219 The Hydrocrane, produced by the Bucyrus-Erie Hydrocrane Division, South Milwaukee, Wis., today is finding increasing use as a pipe-laying unit. Available in ¼-yard, 2-ton, and ⅜-yard, 3-ton, it travels at top truck speeds and features simple hand-level controls. For further information, write the manufacturer.

Identification Necklace's Flexibility Avoids Kinks

220 The Bead Chain identification necklace is so flexible that it can't kink, reports the Bead Chain Mfg. Co., 24 Mountain Grove St., Bridgeport, Conn. School students are being issued these necklaces for civil defense purposes. The product has been accepted as standard by the Armed Forces. Write for catalog and complete information.

Snow Loader Cuts Removal Costs

221 The Athey Force-Feed loader cuts snow removal by two-thirds time, states the Athey Products Corp., 5631 W. 65th St., Chicago 38, Ill. According to the manufacturer, many municipalities report that this equipment clears areas quickly and efficiently at low cost, and reduces snow removal time by two-thirds.

Parking Meters

222 Martin Red Ball parking meters have an enclosed force-feed coin slot that cannot jam, clog, or freeze, reports the manufacturer, Martin Red Ball Parking Meters of Benton, Ill., division of the J. W. MenHall Drilling Co. The company states that the lever-action coin receiver, which cannot clog, has no springs to break, does not depend upon springs or gravity, and offers no excuse for not making fee deposits. The Red Ball proclaims overtime parking and can be seen 500 feet away.

Only One Man Needed With Utility Hoist

223 One man can handle heavy loads, where several men were used previously, when employing the Unit Utility hoist, claims the Unit Mfg. Co., 229 Harmon Place, Minneapolis 3, Minn. In seconds it can be moved from shop to truck hoist by lifting it from 3-wheel frame, placed in socket or well mounted on truck bed, work bench, loading deck, or machine tool. The hoist swings 360°.

Police, Fire Alarm Circuits

224 The L. S. Brach Mfg. Corp., 200 Central Ave., Newark 4, N. J., has prepared *Catalog 48-A* which contains information on police and fire-alarm circuits. Equipment described are lightning arresters and fuses, arrester terminals, housed arresters, entrance panels, terminal strips, housed terminals, pot-heads, switches, rare gas relays, testers, Test-O-Lite, Safe-T-Glow, and solderall.

Hard Coal Water Filter Medium

225 Anthrafilt, hard coal water filter medium, is described in a bulletin issued by the Palmer Filter Equipment Co., 822 E. 8th St., Erie, Pa. It is used as a mechanical aggregate in place of sand and gravel. It can be employed in rapid, gravity filters, pressure filters, slow sand filters, swimming pool filters, and hot and cold process softening filters. The manufacturer states that they require less backwashing, give longer filter runs, and do not coat with carbonates rapidly.

For Threading Pipe

226 Toledo pipe tools and power pipe machines are reported in a catalog issued by the Toledo Pipe Threading Machine Co., 1445 Summit St., Toledo, Ohio. Hand tools may be obtained for all pipe sizes ⅛ to 12 inches and ¼ to 1-inch bolts, and power pipe machines up to 2 and 4-inch capacity.

Steel Strapping For Street Signs

227 Stainless steel strap and galvanized steel for semi-permanent applications in attaching street signs and highway markers are produced by A. J. Gerrard & Co., 1952 Hawthorne Drive, Melrose Park, Ill. Complete accessories are available in both metals. For full details, write the manufacturer.

Small Submersible Pump

228 The Byron Jackson Co., P. O. Box 2017 Terminal Annex, Los Angeles 54, Calif., has introduced a new small submersible pump, the BJ Subette, which is designed for small capacities at high heads from wells of 6-inch diameter and from 30 to 130-gpm capacity at heads of from 80 to 770 feet. The manufacturer states that the unit entirely eliminates the alignment and bearing protection problems of shaft-type installations.

For Measuring Sewage

229 For measuring sewage, sludge, or trade wastes, the Simplex Valve and Meter Co., makes different forms of venturi tubes to suit specific volume and pressure conditions. It reports that with these tubes, one can adapt a Simplex venturi meter to measure almost any kind of sediment-bearing liquid. Complete details may be obtained from the Simplex Valve and Meter Co., Dept. 11, 6789 Upland St., Philadelphia 42, Pa.

Fire Equipment

230 Equipment for municipal fire departments is produced by the Central Fire Truck Corp., 4437 Manchester Ave., St. Louis 10, Mo. Write to the manufacturer for descriptive literature.

Spray Tank for Street Maintenance

231 The Littleford 101 utility spray tank is employed for street maintenance. It has a hand spray for large patch jobs, a 10-foot spray bar for small-application work, and a pouring pot outlet for crack filling and small-patch work. Bulletin No. 5 describes the equipment. Also available from Littleford Bros., Inc., 500 E. Pearl St., Cincinnati 2, Ohio, is Bulletin No. 1 on the Model 84-HD tar and asphalt kettle with motor spray attachment for blacktop street patching.

Cement-Mortar Lining For Cast Iron, Steel Pipe

232 Catalog No. P-50, issued by Pipe Linings, Inc., Box 3128, Terminal Annex, Los Angeles 54, Calif., a subsidiary of the American Pipe and Construction Co., reports on the Tate Process of cement-mortar lining of smaller diameter water, oil, and gas pipelines. The company states that this method cleans corroded matter and tubercles from pipe walls, eliminates further cleaning and discoloration of water, reducing pumping costs, and restores flow coefficients.

Four-Cycle Diesel Engine

233 *Bulletin 191* has just been released by the Nordberg Mfg. Co., Milwaukee 7, Wis. It describes and illustrates the Nordberg Supairthermal engine, a four-cycle diesel, duafuel or spark-fired gas unit with the ability to produce, in any given size, one-third more horsepower than the conventional turbo-charged engine, states the manufacturer. Models available are in four-cycle types for stationary and marine service in sizes from 425 to 3,200 bhp.

Water Meters with Interchangeable Parts

234 Trident water meters have interchangeable parts so that they fit perfectly into old Trident casings, states the Neptune Meter Co., 50 W. 50th St., New York 20, N. Y. For catalog and prices, write to the manufacturer.

Truck Cranes

235 Koehring truck cranes attain traffic speeds up to 35 mph and are employed on heavy duty lifting jobs and scattered city maintenance work. The maximum boom reach of the 10-ton Koehring 205 is 85 feet, and the Koehring 304 truck crane lifts up to 25 tons. Full details may be obtained by writing to the Koehring Co., Milwaukee 16, Wis.

Converts Grader Into Ice Cutter

236 The new Martin Wobble Disc converts a grader into a fast, efficient ice cutter, according to the Minnesota Four Wheel Drive Co., 786 University Ave., St. Paul, Minn. It operates on a rolling principle, rather than digging, and will not injure obstructions or the machine itself. The Wobble fits any motor patrol and is self-cleaning.

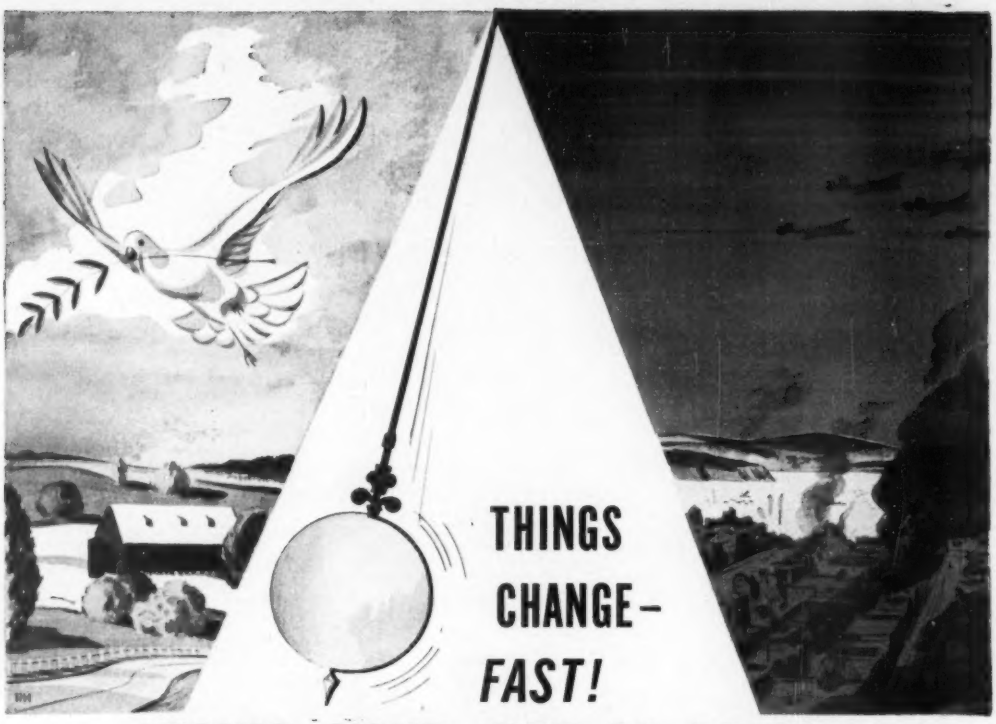
Street and Airport Test Equipment

237 A complete list of the equipment you need to test the materials going into the construction of streets or airport runways will be supplied by the Central Scientific Co., 1700 Irving Park Road, Chicago 13, Ill. This is a 7-page listing and includes current prices of each item.

Paving Joint Material

238 An 8-page catalog on Sealtight paving products has been issued by W. R. Meadows, Inc., of Elgin, Ill., manufacturer of a full line of paving joints and accessory items. The publication gives descriptions, helpful installation hints, and ordering information on asphalt, fiber and corkfill expansion joints, tongue and groove joints, dummy joints, concrete curing compounds, base plates, joint sealing compounds, sewer-joint compounds, and zone-marking paints.

(See Page 29 for more Bulletins)



THINGS CHANGE— *FAST!*

WOULD YOUR CITY BE READY?

We all fervently hope you will never need to use an air-raid warning system in your community; but what if the international picture changed overnight? Could you get a warning system up in time? Would it do the job? Could you train your population in its meaning?

You can resolve these vital questions now by calling in your Federal representative. He can help you scientifically plan a warning system for your specific needs and at far more reasonable cost than a rushed, makeshift system you'd have to buy at a premium. He can show you how you can coordinate your activities with the government Civil Defense program and its available funds for municipalities.

For you must plan now! Federal will show you how a multiple small siren system will give you 20% greater warning coverage than centrally-located large signals. Federal signals are the world's finest and loudest and are now installed in planned systems that protect many cities. Don't underestimate the necessity of being ready to save your city's population . . . discuss this vital problem with your Federal representative this week!

FEDERAL ENTERPRISES, INC.

FORMERLY: FEDERAL ELECTRIC COMPANY, INC.

8756 SO. STATE STREET • CHICAGO 19, ILLINOIS

Obtain this Literature Free of Charge!

Write directly to the manufacturers or use the coupon on page 25

Rotary Snow Plow

239 Jari Products, Inc., 2934-G Pillsbury Ave., Minneapolis 8, Minn., reports that its Jari Jr., self-propelled rotary snow plow cuts a one hour's hand-shoveling job to 10 minutes, cuts a 16-inch swath, and its rotary rake chews hardened snow for easy removal. For further information, write the manufacturer.

For Street Repairs

240 Barco rammers tamp backfill to 95% compaction at low cost, reports the Barco Mfg. Co., 1835 N. Winnemac Ave., Chicago 40, Ill. This method of repairing streets when holes or trenches are dug in paved areas eliminates mounding up the backfill and waiting for it to settle, and using expensive granular replacement fill. Write for Catalog No. 621 which describes the equipment.

Check Valves Solve Water Hammer Worries

241 Williams-Hager flanged silent check valves are the answer to water hammer worries, states The Williams Gauge Co., 3013 Pennsylvania Ave., Pittsburgh 33, Pa. These valves provide positive protection in any position, including angular, horizontal, and vertical with flow either upward or downward. *Bulletin WH-100* describes the equipment.

Two-Way Aerial Mapping Service

242 Fairchild Aerial Surveys, Inc., photogrammetric engineers, 224 E. 11th St., Los Angeles 15, Calif., or 21-21 Forty-First Ave., Long Island City, N. Y., offers its two-way mapping service for city planning. It reports that city engineers and other planning groups can make accurate decisions with a minimum of time and expense by comparing a precise photomap on one hand with an atlas of well indexed contour maps on the other.

These House Numbers Are Easy to Read

243 Premax stamped and embossed house numbers are designed to insure the greatest legibility under all conditions, according to Premax Products, Division of the Chisholm-Ryder Co., Inc., 5246 Highland Ave., Niagara Falls, N. Y. Available are standard Roman designs in 2, 3, 4, and 6-inch heights, also reflecting designs in 3 and 4-inch heights.

Standby Electric Power

244 Fairbanks, Morse & Co., Chicago 5, Ill., offers generating sets to meet a wide range of standby power requirements. They provide emergency power and protect against loss of life, property damage, and lawsuits. The equipment is employed by hospitals, institutions, police, fire, and other municipal departments.

Dump Units' Capacities From 8,000 to 90,000 Pounds

245 The Heil Co., Dept. 43111, 3043 W. Montana St., Milwaukee 1, Wis., on request will furnish its latest bulletins which describe its dump units to meet any street and highway repairs and maintenance need. Hoisting capacities range from 8,000 to 90,000 pounds. The manufacturer's equipment includes the Heiliner, 2-wheel tractor and scraper, platform conversion hoist, scrapers, and dozers.

For Street Maintenance

246 According to The Barrett Division of the Allied Chemical & Dye Corp., 40 Rector St., New York 6, N. Y., streets built with Tarvia improve with age; it penetrates surfaces and binds the underlying material together; it is unaffected *by* gasoline, kerosene, or moisture, and may be applied at moderate temperatures and with ordinary equipment.

Reflective Traffic Signs

247 The Prismo Reflecto-Kit is used throughout the country for reflectorizing all types of traffic signs and markers, reports the Prismo Safety Corp., Huntingdon, Pa. The company points out that Reflecto-Kit markings are easy to see at wide angles, easy to read and to apply in the field or shop.

Dual Automatic Parking Meters

248 Available from The Dual Parking Meter Co., Canton 2, Ohio, are Bulletin DU-504 for on-street parking, and Bulletin DU-505 for off-street parking. Dual gearshift meters allow flexible parking control and time, and coin conversions can be made on the spot as conditions require. Write for the literature on these Dual automatic parking meters.

Mercury-Vapor Street Lighting Systems

249 Mercury-vapor street lighting systems as planned by Westinghouse eliminate glare without sacrificing efficiency, according to the manufacturer. Relamping is a one-hand operation because of the hinged construction; this unit provides lighting distribution patterns for both wide and narrow highways. Write for Bulletin B-3876-A from the Westinghouse Electric Corp., P. O. Box 868, Pittsburgh 30, Pa.

Street Grader

250 More traction, more load, and more miles of road are reported by Meili-Blumberg Corp., 1635 Wisconsin St., New Holstein, Wis., in its Model 501 grader which will handle rough grading, fine grading, maintaining, and ditching. Write the manufacturer for literature.

For Jointing Cast Iron Water Mains

251 The Leadite Co., Girard Trust Co. Bldg., Philadelphia 2, Pa., on request will send printed matter on its product used for jointing cast iron water mains. There are no large bell-holes to dig and Leadite can be melted and poured.

Aerial Surveys and Maps

252 *Aerial Surveys and Maps from Photographs* is the title of a new booklet issued by the Abrams Aerial Survey Corp., Lansing 1, Mich. This publication presents a brief non-technical explanation of aerial photogrammetry which saves time and money on engineering projects of municipalities.

Tubular Steel Poles For Street Lighting

253 Joslyn tubular steel poles for street lighting are designed for strength and durability, and to improve the appearance of any street according to the Joslyn Mfg. and Supply Co., 20 N. Wacker Drive, Chicago 6, Ill. They are available for standard 25 foot, 30 foot, or other mounting heights; for overhead or underground wiring with plain or compartment bases.

Steam Cleaners

254 Steam vapor and high pressure combination cleaners are illustrated in literature distributed by the Malsbary Mfg. Co., 845 92nd Ave., Oakland 3, Calif. High pressure cleaners may be obtained in the 250, 300, and 500 series, and steam vapor models in the 110 and 220 series. Among the groups employing them are municipalities, airfields, construction companies, and service stations. The manufacturer states that its equipment reduces fire hazards, cuts cleaning costs up to 90%, and reveals repair needs.

Airport Lighting—Floodlights

255 On request, the Crouse-Hinds Co. of Syracuse 1, N. Y., will furnish information on its elevated runway and taxi light with mounting assemblies to suit the airport requirements of municipalities. Style A mounting consists of surface flange and 30-inch anchor stake with a direct earth burial type transformer. Other mountings are Style B, which has a base plate and gasket to fit transformer base housings; Style C, which is for multiple circuits, consisting of a junction box, and Style D, which consists of an integral cast Feraloy base housing and transformer with anchor stake.

Bird-Proofs Buildings

256 Manufactured by the National Bird Control Laboratories, 1035 West Lake St., Chicago 7, Ill., Roost-No-More is a substance that gets rid of bird nuisances without killing. The company states that it is easily applied with a standard caulking gun, doesn't wash off in rain, lasts about a year, and is humane and harmless to birds.

One-Man Machine for Complete Sanitary Fill Job

257 The International Crawler-Drott Bullclam unit requires only one man to handle all four steps of the complete sanitary-fill job, according to the Drott Mfg. Corp., Milwaukee 8, Wis., and the International Harvester Co., Chicago 1, Ill. It scoops out the excavation, spreads the refuse, crushes and grinds the bulk with the brute International Crawler power behind the curved Bullclam front. Then it spreads and grades the cover dirt to finish the job.

For Ice Control

258 Information on its equipment for sealcoating and ice control may be obtained by writing to the Swenson Spreader & Mfg. Co., Lindenwood, Ill. The machine spreads salt, chloride, sand, and cinders in any width or amount desired.

Sewer Cleaning Problems?

259 If so, the Flexible Underground Pipe Cleaning Co. and the Flexible Sewer-Rod Equipment Co., 9099 Venice Blvd., Los Angeles 34, Calif., will supply information on its pipe cleaning tools and equipment that should provide the answer. Write for descriptive literature.

For Rugged Wear, Use These Parking Meters

260 Mi-Co parking meters are sufficiently rugged to operate under the most adverse weather conditions, states Mi-Co Meters, 231 Court St., Covington, Ky. According to the manufacturer, the equipment has few moving parts which reduces the potential trouble spots, and simple mechanism which makes for adjustment in a few minutes at the meter location.

For Refuse Collector Trucks

261 The Roto-Pac is an all-purpose unit for ashes, rubbish, and garbage. Manufactured by the City Tank Corp., 53-09 97th Place, Corona 68, L. I., N. Y., it provides automatic continuous loading and packing, greater compaction, low loading height and operating pressure, and doubles as a snow-hauling vehicle.

Small Bituminous Mixer For Street Repair

262 Available in 10 and 14-cubic foot sizes, the Kwik-Mix is a one-man bituminous mix plant, for a single operator controls charging, mixing, and discharging without leaving the platform. According to the Kwik-Mix Co., Port Washington, Wis., pug-mill mixing action, uniform oil distribution, and accurate temperature control, assure even-texture mix every batch.

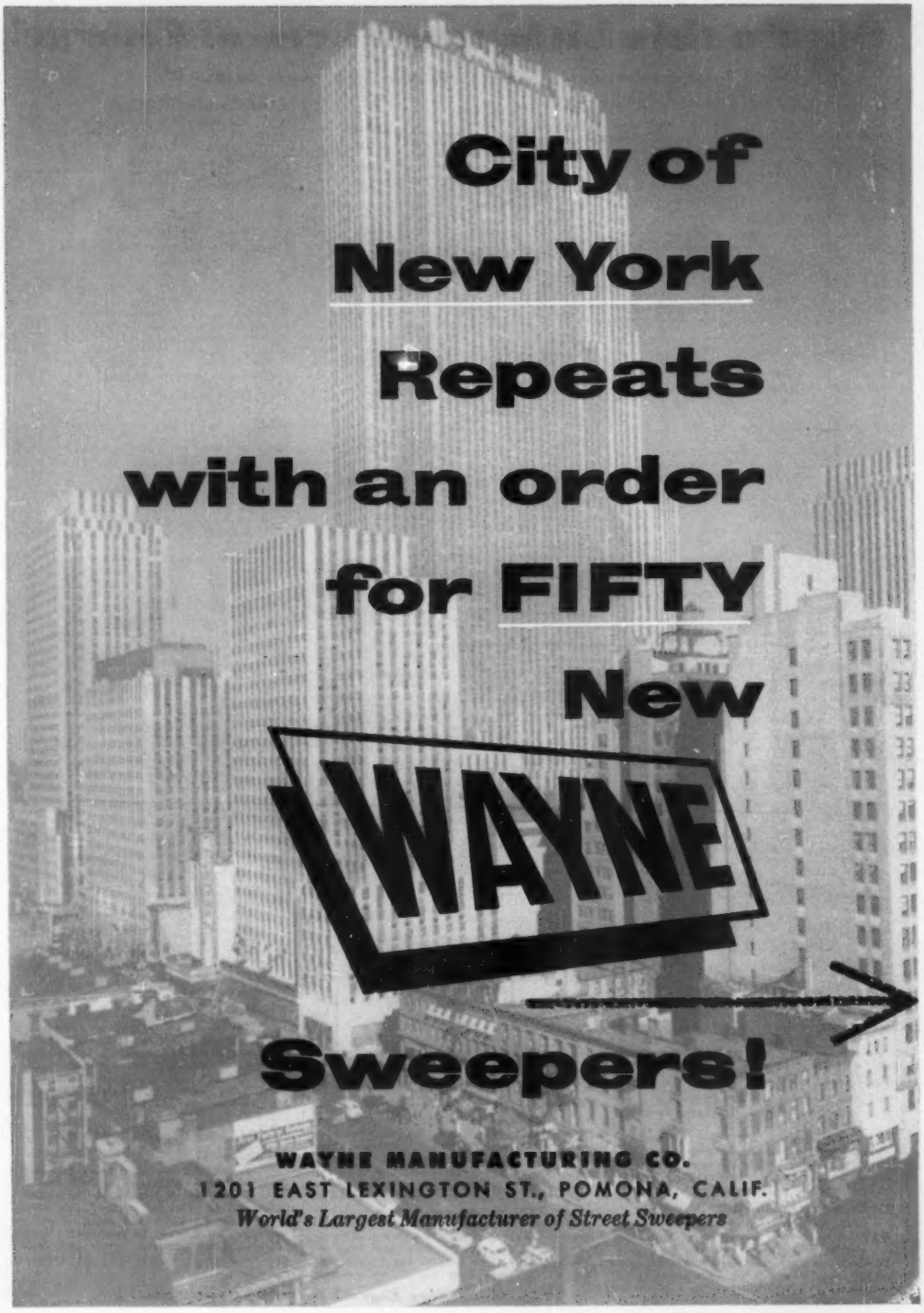
Tractor Bulldozer

263 The task may be road or street reconstruction, refuse dumping area, and maintenance, snow removal or any of others that require heavy-duty dependable performance. For these tasks, many are turning to the International TD-14A tractor bulldozer combination. Literature is available from the International Harvester Co., Chicago 1, Ill.

Street- and Flood-Lighting Equipment

264 Indoor and outdoor lighting equipment for every need may be obtained from the Revere Electric Mfg. Co., 6015 Broadway, Chicago 40, Ill. Included are floodlights, searchlights, boundary lights, and poles, as well as luminaires for mercury or incandescent lamps, hinged lighting standards, single and double arm one-piece steel standards, and white-way Pylon-Lites.

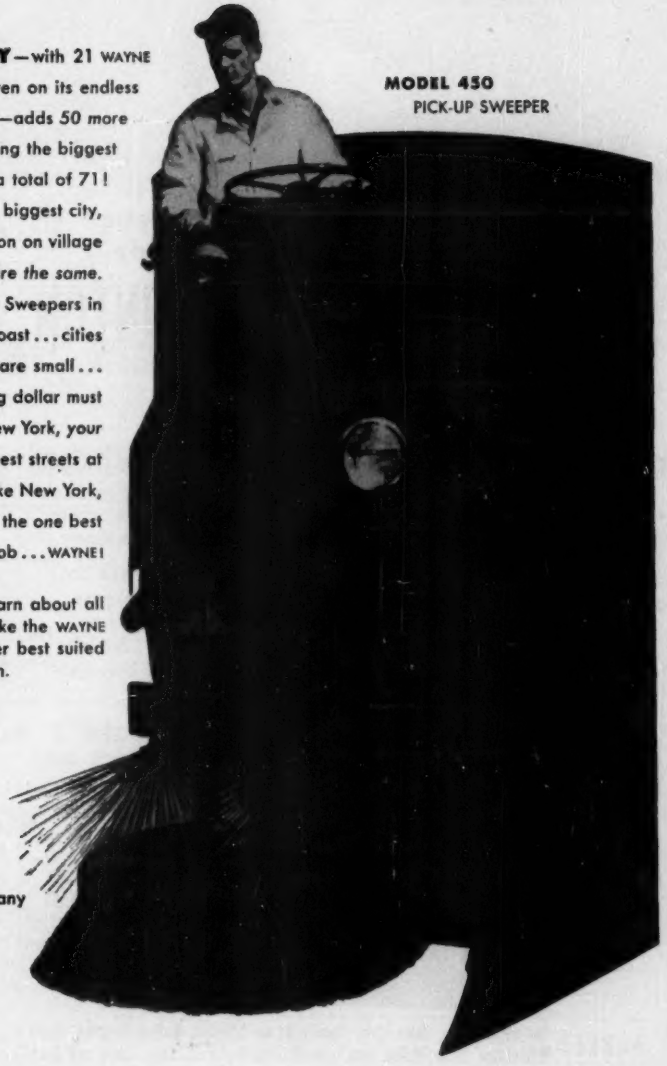
(See Page 32 for more Bulletins)


City of
New York
Repeats
with an order
for FIFTY
New
WAYNE
Sweepers!
WAYNE MANUFACTURING CO.
1201 EAST LEXINGTON ST., POMONA, CALIF.
World's Largest Manufacturer of Street Sweepers

NEW YORK CITY—with 21 WAYNE Sweepers already performance-proven on its endless miles of streets and highways—adds *50 more* WAYNES to the task of doing the biggest street cleaning job in the nation—a total of 71!

For the biggest job in the biggest city, or for sound, economical operation on village streets, WAYNE *savings are the same.* That's why you'll find WAYNE Sweepers in more than 200 cities from coast to coast . . . cities that are big, cities that are small . . . cities where every street cleaning dollar must do a dollar's worth of work. Like New York, *your* problem is to provide the cleanest streets at the lowest cost. And like New York, it will pay you to get the one best sweeper for the job . . . WAYNE!

WRITE FOR FULL DETAILS . . . Learn about all the important features that make the WAYNE Model 450 Motor Sweeper best suited for your application.



MODEL 450
PICK-UP SWEEPER

Distributed in the New York area
by Mott-Haven Equipment Company

NOTICE THE PRECISION DIE WORK

Here is your assurance of true badge quality and extra long life when you select a

BLACKINTON BADGE

Look carefully into the die impression of a Blackinton Badge, notice the precision die work — the clean cut sharp detail in the fine lines, seals, scrolls, characters, symbols and lettering. Here is die work at its finest.

In Blackinton Badges full responsibility for the true quality of your badge rests in the hands of expert die cutters. It is their task to cut by hand, every line, every figure, every letter, to produce precisely, down to the finest detail, exactly what the original sketch indicates.

You can see why die cutting is so important, for only with sharp, clear dies will your badge have that extra snap — that Blackinton appearance. Specify Blackinton Badges from your badge supplier and be sure of the finest in badges.

BLACKINTON
W. R. BLACKINTON & CO., INC., ATTLEBORO FALLS, MASS.

BADGES for Police, Fire, Town, City, County, State Officials, Civilian Defense, Plant Protection, Junior Police; also Transportation badges — Bus, Truck, and Taxi

Catalogs for You

Write directly to the manufacturers, or use coupon on page 25

Pumps for Waterworks

265 Economy and efficiency are achieved when cities employ Economy pumps for waterworks, according to Economy Pumps, Inc., Sedgley Ave. at 19th and Lehigh, Philadelphia 32, Pa. For detailed information and illustrated catalogs, write to the company, addressing your query to Dept. AB-11.

Machines for Use By Tax Departments

266 Remington, Rand, Inc., on request, will furnish a copy of its *Tax Accounting Procedures Manual No.* MC 738. The manual describes methods which improve collections of delinquent taxes so greatly, that the necessary new equipment more than pays for itself within the first six months. For a copy of the publication, write to Remington Rand, Inc., Management Controls Reference Library, 315 Fourth Ave., New York 10, N. Y.

Metal Sewer Pipe—Relining

267 Armco corrugated metal pipe for new sewer construction may be obtained in a type and size for every need in diameters from 8 to 96 inches. Available are plain galvanized for normal service, asbestos-bonded to check severe corrosion, and paved-invert to protect against erosion. Failing structures can be restored to their original usefulness by relining with this product. The Armco Steel Corp. is a subsidiary of the Armco Drainage & Metal Products, Inc., 3141 Curtis St., Middletown, Ohio.

Reflectorized Street Signs

268 Reflectorized street signs are made by the Grace Sign & Mfg. Co., St. Louis 18, Mo. Made of 30-gauge steel, EZ-ON faces slip over the old signs without taking them out of service. The standard copy may be obtained in 18, 24, and 30-inch square, octagon, or diamond shapes.

Double Rotary Snow Plow

269 The Trio Snow Jet is a 30-inch double rotary snow plow with a 7½-hp gasoline engine and a never-stop endless track. It walks through any snow at desired throttle speed. The six-foot Trio double rotary snow plow is easy to mount on any truck or tractor. For complete literature, write to the Dahlman Equipment Sales Co., 500-502 N. Prior, St. Paul 4, Minn.

Leaf-Cleaning Problems?

270 If so, the Leaf Loader Division of the American Structural Steel and Tank Co., 21050 W. 8 Mile Road, Detroit 19, Mich., will send a leaflet on its equipment. It reports that the American vacuum leaf loader solves leaf or clean-up problems of municipalities, and points to its fast and clean action, mechanization, and low cost.

Use Big Portable Containers For Bulk Rubbish Collection

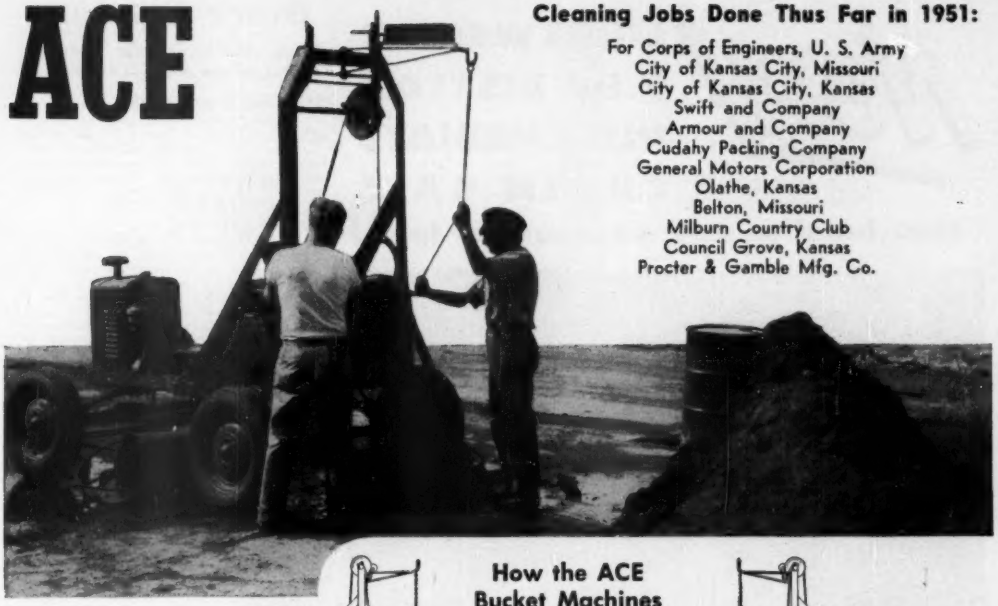
271 Dempster Brothers, 8111 Dempster Bldg., Knoxville 17, Tenn., states that its Dempster-Dumpster system of refuse collection triples man-hour efficiency, reduces truck investment, gas, oil, and maintenance costs, and provides an easy, quick, safe, and effective manner of handling bulk trash and refuse. Detachable Dempster-Dumpster containers of various designs range in size up to 12 cubic yards.

What Size Tractor-Loader Do You Need?

272 It's hard to visualize a handier unit than the front-end tractor-loader for street construction, maintenance, street-cleaning, and water or sewer laying operations. So the three sizes of the Oliver Industrial wheel tractor equipped with the Ware loader should have special appeal. The loader is hydraulically controlled, is built with an especially long reach, and distributes the weight evenly on the tractor frame. Write The Oliver Corp., Industrial Division, 19300 Euclid Ave., Cleveland 17, Ohio, for literature describing the company's complete line of tractors.

(See page 34 for more Bulletins)

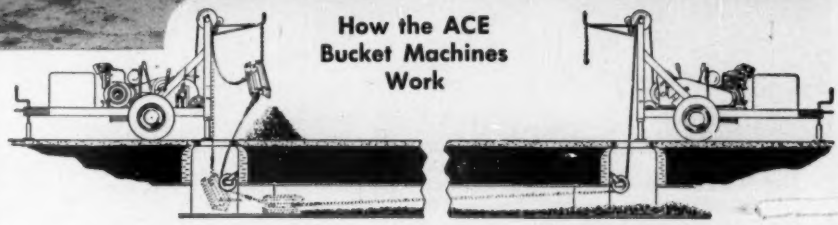
ACE



Cleaning Jobs Done Thus Far in 1951:

For Corps of Engineers, U. S. Army
City of Kansas City, Missouri
City of Kansas City, Kansas
Swift and Company
Armour and Company
Cudahy Packing Company
General Motors Corporation
Olathe, Kansas
Belton, Missouri
Milburn Country Club
Council Grove, Kansas
Procter & Gamble Mfg. Co.

How the ACE Bucket Machines Work



ACE

Cleans Out ROOTS, ROCKS and SAND

ACE two-way cleaning operation gets rid of all debris. No half-cleaned sewers here! Toughest roots, heaviest rocks come right out with the rest of the sewage.

NO JOB TOO BIG—OR TOO SMALL
ACE mobile service units go anywhere, any time.

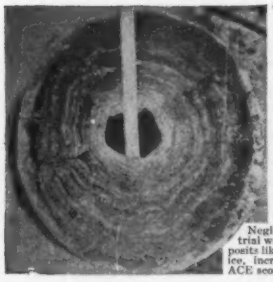
Safeguard your city or industry against improper sanitation. ACE *knows* the pipe-cleaning business, sewer, water or culvert! Our rod and bucket operations are quick, sure, and they save you money! Clip and mail the coupon NOW!

24 Hours a Day

7 Days Every Week

Sewer and Water Main Cleaning Specialists

ACE Pipe Cleaning Contractors, Inc.
2003 Indiana, Kansas City, Mo.



Neglected city and industrial water pipes fill with deposits like this—cut down service, increase fire rates. Let ACE scour them *clean* for you.

OK *I want to See:*

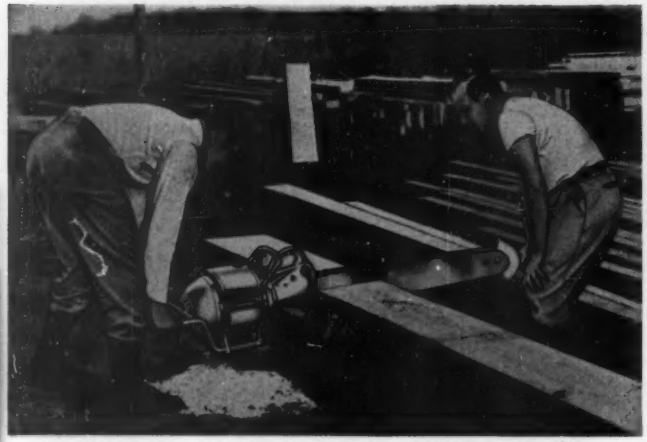
☐ Your new 21-minute movie of the Kansas City Flood.*
☐ Your Company representative. ☐ More details on your service.

Name_____
Title_____
Company or City_____
Street_____
City and State_____

*Shows 9 minutes of disastrous July, '51 flood, and 12 of aftermath clean-up of flood-clogged sewers, by ACE crews. Taken right on the job!

New! LIGHTWEIGHT 9 HP DISSTON INTERMEDIATE CHAIN SAW

that handles any woodcutting job!



Here's the power chain saw you've been waiting for—the new [illegible] 2 cylinder Disston Intermediate Chain Saw, the DA-211. Powerful enough to handle any woodcutting job—yet its balanced light weight makes it easy to heft. It will give you many years of satisfying, trouble-free cutting power.

ALL-AROUND TOOL! The Disston Intermediate is perfect for right-of-way and line clearance, cuts mine props and bridge timbers with ease, has hundreds of uses in shipyards and on railroads, as well as for general plant maintenance.

LABOR-SAVING? And how! Time-saving, too. The DA-211 can do in a few minutes the work of an hour's manual sawing.

HENRY DISSTON & SONS, INC.

Philadelphia 35, Pa., U.S.A.

In Canada, write: 2-20 Fraser Ave., Toronto 3, Ont.

THE DISSTON DA-211 INTERMEDIATE CHAIN SAW

LOOK AT THESE GREAT FEATURES...:

2 cylinders, 9 horsepower • Perfect balance—no vibration • Automatic clutch • Automatic chain oiler • Dependable float-feed carburetor • Simplified, positive controls • Self-rewinding starter • Rugged magnesium castings • Available with "L" or "C" chain • 2' to 7' (incl.) new narrow-profile slotted rails • Transmission swivels to any position—can be easily removed

Henry Disston & Sons, Inc. (Adv. Dept.)
Philadelphia 35, Pa., U.S.A.

Please send me information on the 9 hp DA-211 Disston Intermediate Chain Saw.

Name_____

Street_____

City_____ State_____

11 L

Other Catalogs

Write directly to the manufacturers, or use coupon on page 25

Elevated Water Tanks

273 Elevated water tanks, made by the Chicago Bridge & Iron Co., 2127 McCormick Bldg., Chicago, Ill., mean increased water pressure, decreased pressure variations, and reduced pumping costs. Horton waterworks are of welded steel construction for lower maintenance costs and longer life.

Parking Meters

274 Instantly convertible for either cumulative or non-cumulative time, the Park-O-Meter provides for any coin-time combination. According to the Magee-Hale Park-O-Meter Co., Commerce Exchange Bldg., Oklahoma City 2, Okla., the equipment gives trouble-free operation, has a slug detector, and an out-of-service flag. For illustrated printed matter, write to the manufacturer.

Cement Pipe Lining

275 Descriptive literature on lining pipes from 4 to 144 inches diameter may be obtained by writing to the Centriline Corp., 140 Cedar St., New York 6, N. Y. The manufacturer states that the Centriline process, which mechanically applies cement by centrifugal force, and trowels the surface smooth, prohibits corrosion and increases flow capacities.

Pipe and Fittings In 2 to 84-Inch Sizes

276 Cast iron pipe and fittings in all sizes from 2 to 84 inches with all types of joints are produced by the Warren Foundry & Pipe Corp., 55 Liberty St., New York 5, N. Y. Full details may be obtained from the manufacturer, which makes bell and spigot pipe, flange pipe, mechanical joint pipe, flexible joint pipe, and short body bell and spigot specials.

Street-Lighting Standards

277 Designed to meet the most modern street-lighting safety requirements, the Hy-Lite standards, are built to employ either mercury vapor or incandescent luminaires. According to the American Concrete Corp., 4727 N. Lamon Ave., Chicago, Ill., provision for overhead wiring makes additional savings and the standards' water-polished granite finish requires no painting, saving on maintenance.

Reduce Water Costs With These Wells

278 The costs of water are reduced when municipalities employ Caisson wells, according to Caisson Wells, Inc., groundwater engineers and contractors, of 33 W. 42nd St., New York 18, N. Y. The company states that by using its equipment, water can now be produced at a cost of less than 2 cents per 1,000 gallons, including pumping, operation, maintenance, and amortization.

Iron and Wire Fences

279 Literature is available from The Stewart Iron Works Co., Inc., 1821 Stewart Block, Cincinnati 1, Ohio, on iron and wire fences. Other items manufactured by this company include settees, wire mesh partitions, iron railings, steel folding gates, ornamental iron lanterns, grilles, bronze plaques, and steel flagpoles.

Sanitary Landfill

280 A new, two-color folder on sanitary landfill is available from the Drott Mfg. Co., Milwaukee 12, Wis. It shows typical projects in different places under adverse conditions and the approximate location of successful sanitary fills in this country. Discussed in detail are the four steps necessary to build a good sanitary fill with the Drott Bullclam shovel, available in one, two, or three-yard capacities for International TD-9, TD-14A, or TD-18A tractors.

Concrete Pressure Pipe

281 Lock Joint reinforced concrete pressure pipe is used for water supply lines throughout the nation, reports the Lock Joint Pipe Co., P. O. Box 269, East Orange, N. J. Walls of proportioned concrete prevent corrosion or tuberculation, assuring durability and permanently high carrying capacity. Write the company for descriptive literature.

(See Pg. 177 for more Bulletins)

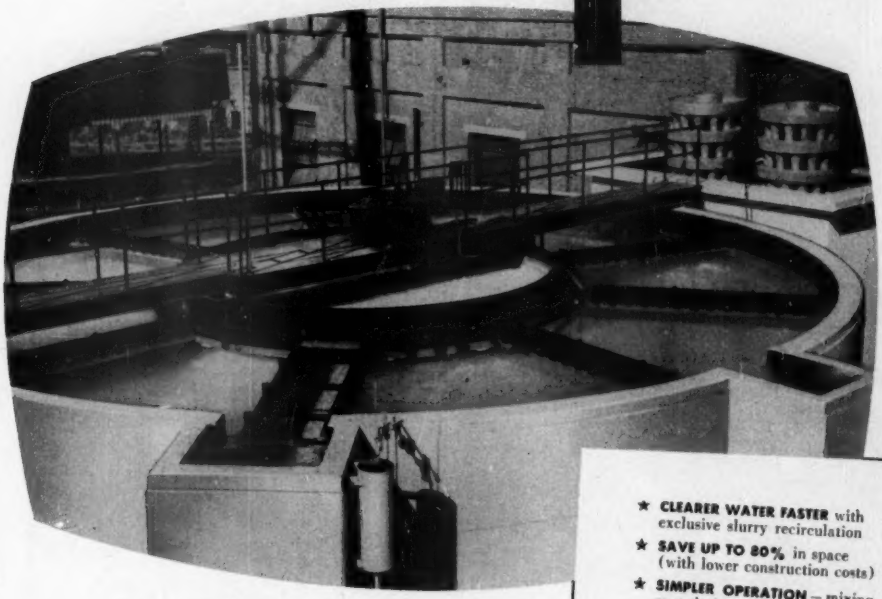
AT OCALA, FLORIDA

compact **Infilco** *plant softens 4 M.G.D. with ACCELATOR only 44 ft. in dia.*

clear, non-corrosive soft water with

Accelator®

In treating well water of 20 grain per gallon hardness this Infilco installation uses the slurry recirculation principle of the Accelator to soften and clarify a comparatively large volume in very small space. Settling basins are eliminated. Effluent is clear, aerated for non-corrosiveness, and reduced in hardness to 5 gr. per gallon.



- ★ **CLEARER WATER FASTER** with exclusive slurry recirculation
- ★ **SAVE UP TO 80%** in space (with lower construction costs)
- ★ **SIMPLER OPERATION** – mixing, coagulation, clarification and sludge removal all in one unit
- ★ **FASTER CHEMICAL REACTION**
- ★ **HIGH RATINGS**

Plant Engineered by
RUSSELL & AXON *Daytona Beach, Florida*

44 ft. diameter Accelator – with automatic chemical feeders and central controls. 2 Multicone Aerators
3 Filters, each 16 x 22 ft. with Wagner underdrains.
Serves population of 11,588 with average daily use of 1.5 m.g.d. and capacity of 4.0 m.g.d.

INFILCO
BETTER WATER CONDITIONING AND WASTE TREATMENT SINCE 1894

INFILCO INCORPORATED | *Tucson, Arizona*

FIELD ENGINEERING OFFICES IN 26 PRINCIPAL CITIES

World's Leading Manufacturers of Water Conditioning and Waste-Treating Equipment

WHAT DO WE DO IF

Eye-Opening Civil

HIGHLY RECOMMENDED

"...'And A Voice Shall Be Heard!' is indeed a significant contribution to the civil defense communications program, and we are pleased that the role of the radio amateur is emphasized..."
GEORGE W. BAILEY, W2KH, Pres.
American Radio Relay League

"...presents most graphically the job of civil defense..."
CD Headquarters
Youngstown, Ohio

"...helped us greatly in setting up our communications system..."
J. A. DEWART, Chairman
Civil Defense
City of Peterborough
Ontario, Canada

"...a top-notch job well done..."
SEYMOUR N. SIEGEL
Director of CD Communications
City of New York

IT DOES HAPPEN HERE?

Defense Film!

"And A Voice Shall Be Heard!"—Produced For General Electric by The March of Time—Now Available for Showings in Your Community. Fills Vital Public Service Need.

A DRAMATIC new link in General Electric's nationwide Civil Defense Communication Advisory Service, this 22-minute sound motion picture is a powerful and gripping presentation of what every community needs today.

Nothing like it has ever been filmed before. You will see how an American city of average size has organized its civil defense effort for realistic action in any emergency. This picture demonstrates what your community should do to prepare its own disaster-proof communication system—and *how* to do it.

The March of Time, which produced it, has called the film one of its best documentaries. General Electric offers it as a public service to state and municipal organizations, to civic and industrial groups, and to individuals. Prints are available for 16 mm screening today. By all means, arrange for a showing now. *It could mean the life of your community.*

What happens when existing communications are destroyed? See how a city recovers its communication facilities after an attack, fights back to win against disaster. This picture shows you, step by step.

Medical and radiological teams are shown in action in contaminated areas. Proper communication keeps crews in touch with headquarters, helps save lives in vital defense work.

On-the-spot reporting of actual civil defense activity highlights this timely film. No professional actors are used. Every scene is authentic in background and execution. It could have been filmed in *your* city!

You can put your confidence in—

GENERAL ELECTRIC

Order it for your community today!

General Electric Company, Section 10121
Electronics Park, Syracuse, New York

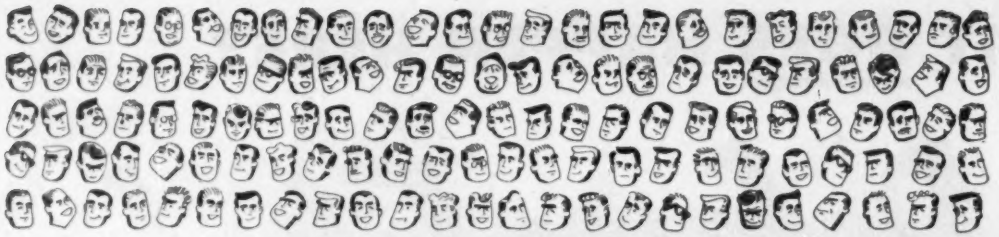
I want to arrange, without obligation, a screening for my organization.

NAME.....

ORGANIZATION OR TITLE.....

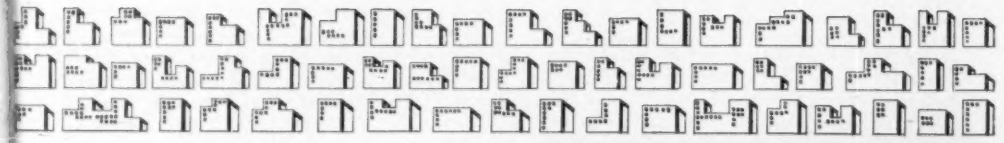
ADDRESS.....

CITY.....STATE OR PROVINCE.....

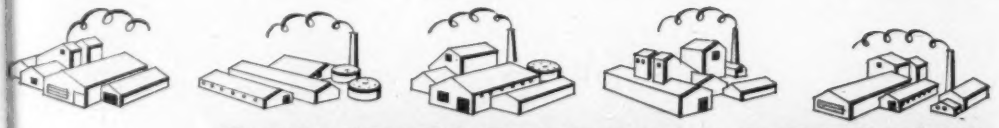


257 FIELD REPRESENTATIVES

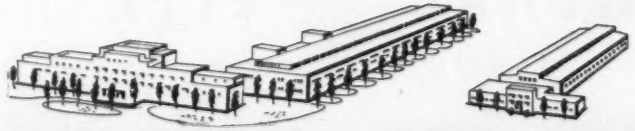
48 INSTALLATION INSTRUCTORS



58 SALES OFFICES



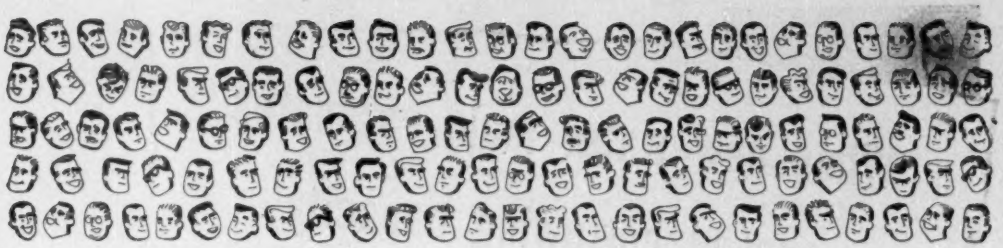
5 MANUFACTURING LOCATIONS



THE LARGEST RESEARCH CENTER OF ITS KIND

JOHNS-MANVILLE JM PRODUCTS

Johns-Manville



At your service—

. . . a complete, nationwide TRANSITE PIPE ORGANIZATION

Here is an organization which, over the past many years, has helped to bring a better, a more efficient and a more economical means of water transportation to many hundreds of American cities and towns.

Its facilities include more than 250 field representatives with headquarters in 58 cities. It also comprises a staff of competent installation instructors who explain recommended installation practices to pipe-laying crews. This Johns-Manville service is an important factor in helping to assure the installation economies as well as the long-term *overall* economies that go with Transite Pressure Pipe.

Behind this field organization are the modern production methods which assure the high quality of the finished product. These begin with careful selection of raw materials and are continued through the special processing operations to the final tests which each individual length of pipe must undergo before shipment is made. Five conveniently located plants now serve Transite Pipe users from coast to coast.

And back of all this is engineering—and research. For without them, the plus values that have been built into Transite Pipe would not have been possible. Today, in the new J-M Research Center, the engineer and the technician continue to find new answers to old problems. Their work is an indispensable part of the complete Transite Pipe service which Johns-Manville offers the water works industry. For further information, write Johns-Manville, Box 290, New York 16, N. Y.

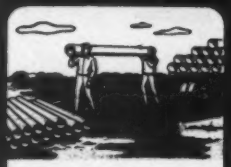
*TRANSITE is a Johns-Manville registered trade mark

TRANSITE ASBESTOS-CEMENT PRESSURE PIPE

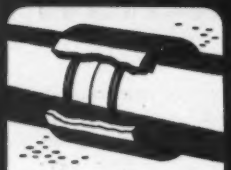
FOR BETTER WATER SERVICE

When new water main estimates exceed borrowing capacity

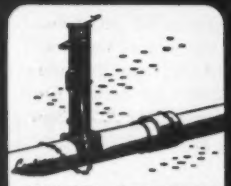
investigate "CENTURY"® asbestos-cement pressure pipe



Light-weight, easy-to-handle "Century" Pipe can be stored wherever convenient; moved without special handling equipment.



Cut-away view of the "Century" Simplex Coupling. Simplex Couplings make immediately and permanently tight joints.



With this simple tool, even an unskilled laborer can quickly make a tight joint for straight runs or curves up to 5° deflection per pipe length using "Century" Simplex Couplings.

K&M first in asbestos®

Now many communities can have modern water main systems—or extend existing systems—at costs that can be more easily amortized out of revenues. Residents can enjoy the convenience of centrally supplied water in their homes, plus the advantages of increased fire protection and often, lower fire insurance rates. Community planners find it easier to raise needed funds because of the relatively low-cost features of "Century" Asbestos-Cement Pipe.

"Century" Pipe is moderate in price. And, though it is exceptionally strong, it is also light in weight and easy to handle: installation is quick, easy, and at low cost.

Add to these the durability of "Century" Pipe, its absolute freedom from tuberculation, its high resistance to soil corrosion and immunity to electrolysis, and you'll quickly see why: *Before you buy or specify any pipe for water mains, it will pay you to investigate "Century" Asbestos-Cement Pressure Pipe.*

FREE booklet, "Mains Without Maintenance," sent on request. Write for it.

Nature made Asbestos... Keasbey & Mattison has made it serve mankind since 1873

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have held a pre-eminent position among water works engineers

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BETTER ROADS the YEAR 'ROUND

Blending with every landscape and free from glare, roads built with Tarvia* road tar take the strain out of driving. They are self-healing under impacting traffic.

The heat-absorbing qualities of black roads built with Tarvia* road tar make them easier to keep open in winter, as snow and ice melt more quickly. And they are not affected by chemicals used to remove snow and ice.

because

1 Roads built with Tarvia* road tar improve with age. Occasional applications will renew the life of the surface, and replace worn-away material.

2 TARVIA road tar penetrates surfaces and binds together the underlying material. It thus makes possible the inexpensive use of local aggregates.

3 Less TARVIA road tar is required because there are less solvents to be evaporated before the binder becomes effective.

4 TARVIA road tar is unaffected by gasoline, kerosene, or moisture. It retains its original properties.

5 TARVIA road tar holds the aggregate tightly in the surface, and produces a gritty surface which is lastingly skid-resistant.

6 TARVIA road tar may be applied at moderate temperatures, and with ordinary equipment.

The Barrett field man is always at your call for expert practical advice.

Barrett Tarvia* ROAD TAR

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ALLIED CHEMICAL & DYE CORPORATION
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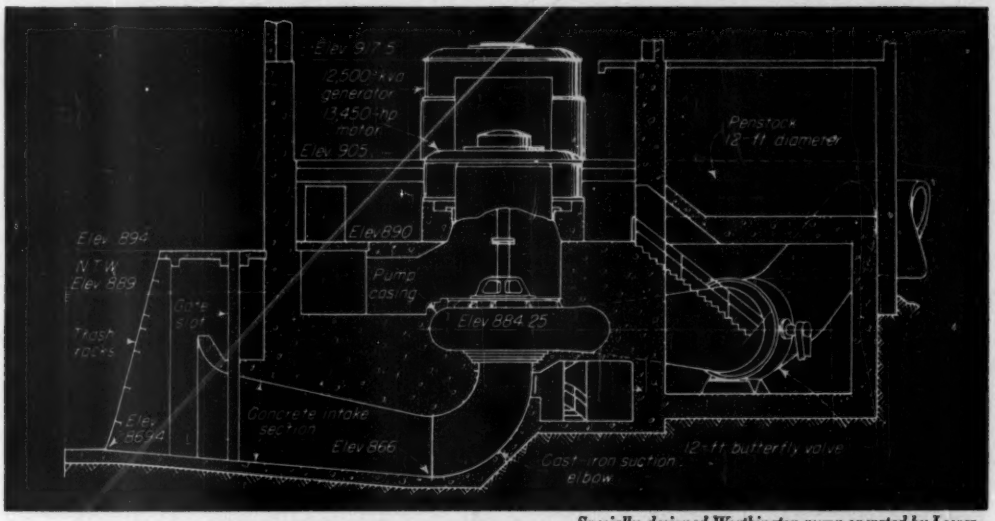
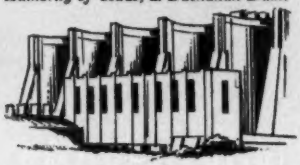


Specially-designed Worthington pump operated by Lower Colorado River Authority of Texas, at Buchanan Dam.

Big Pump Banks Hydro Energy

at 360,000 gpm—and low cost!



It's one of the largest in the world—the Worthington pump used for water storage at Buchanan Dam on the Colorado River in Texas.

There are three 12,500 kva generators at Buchanan Dam. The pump is used in connection with the third one. It uses low-cost off-peak energy to store water which can be used at times of peak load.

The cost of running the pump is only one-quarter the value of the peak energy it helps to produce.

This specially-designed pump is rated at 362,000 gpm under 120 ft head, and is driven by a 13,450 hp motor. It has a 164 rpm shaft, bottom-suction, twin-volute, closed-impeller design. The impeller's center line is 4.75 ft below normal tail water level. So the pump is primed at all times and there is no cavitation of the impeller.

Standards—Specials—a Complete Line

It's another case that proves *there's more worth in Worthington*—proves that Worthington can always supply the right pump for the job. It makes no difference whether tremendous quantities of water are involved as at Buchanan or the relatively smaller amounts required by the average municipality. With the broadest and most complete line in the world, it is often possible to select or adapt a standard model to meet specifications. For detailed information, address Worthington Pump and Machinery Corporation, Public Works Division, Harrison, N. J.

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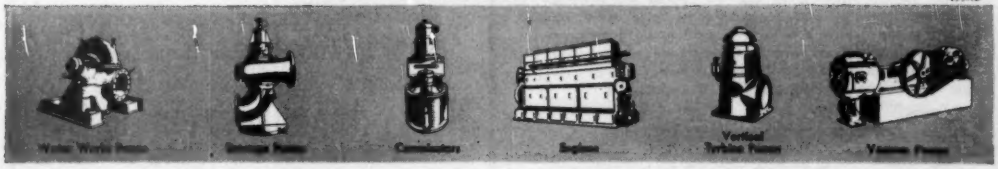

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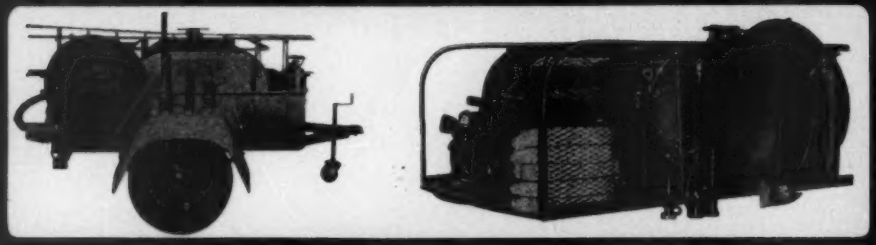
for Small Towns, Communities, Rural Areas and Large Towns

The Famous Porto Pumper (Now in 2 Models)



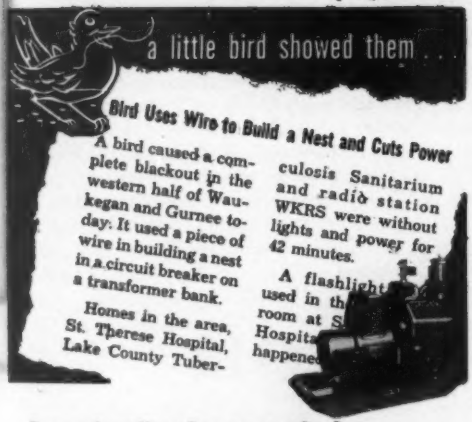
TRAILER MODEL PORTO PUMPER. This completely equipped fire fighting unit carries its own water supply and can be towed by any power vehicle equipped with a trailer hitch. It is easily operated and maintained . . . does not require extensive personnel training . . . may be activated by a one or two man crew . . . can be stored in any present convenient barn or building.

PALLET MODEL PORTO PUMPER. This completely equipped slip-on fire fighting unit readily converts your pick-up truck into effective hard-hitting motorized fire fighting apparatus. Equipped the same as the Porto Pumper Trailer Model, it also carries its own water supply and offers excellent protection in fields when harvesting crops. When not required for active use, it can be quickly removed from the truck — releasing that unit for other useful purposes.

Both models employ the Porto Pump, which features rubber gear construction, making it possible to take water from any source (well, pond, ditch, lake, hydrant, etc.) — whether the water is clean or dirty. In large communities and cities, the Porto Pumpers are ideal for civil defense activities, auxiliary standby and emergency operations.

Write today for complete details

PORTO-PUMP, INC. 227 IRON STREET • DETROIT 7 • MICHIGAN


a little bird showed them . . .
Bird Uses Wire to Build a Nest and Cuts Power
A bird caused a complete blackout in the western half of Waukegan and Gurnee today. It used a piece of wire in building a nest in a circuit breaker on a transformer bank.
Homes in the area, St. Therese Hospital, Lake County Tuberculosis Sanitarium and radio station WKRS were without lights and power for 42 minutes.
A flashlight
used in th
room at S
Hospita
happene

how badly they needed a Fairbanks-Morse Generating Set!

Why gamble with power failure? Install a Fairbanks-Morse Generating Set. It provides peace of mind, and protects the lives and welfare of persons on your premises. Fairbanks-Morse offers generating sets to meet every requirement. See your local Fairbanks-Morse dealer today or write Fairbanks, Morse & Co., Chicago 5, Ill.

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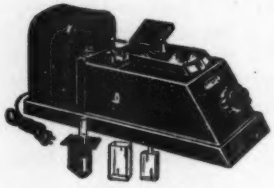
ELECTRIC PHOTOMETER

Adaptable for Use in Water Analysis



Can be used for any determination in which color or turbidity can be developed in proportion to substance to be determined.

KLETT MANUFACTURING CO.
179 East 87th Street New York, N. Y.

OPERATING GUARANTEES EXCEEDED ON EVERY COUNT

by Dorrco Hydro-Treators* at Miami's new Southwest plant.

here are the facts...

In May 1951, the four 69' dia. Dorrco Hydro-Treators installed at the City of Miami's new softening plant near Coral Gables were put in operation. Complete operating results now available show that guarantees have been exceeded on every count.

	GUARANTEED	ACTUAL
Capacity—MGD/unit—maximum	13.33	17.5
Turbidity—ppm at maximum flow	10.0	Less than 8
—ppm at average flow	5-10	±2
Percent solids in sludge	30	45-48
Power required/unit—KW	2.0	1.74
pH	**10.0	9.8-10.2
Alkalinity-Phenolphthalein—ppm	**20.0	±1
Methyl Orange—ppm	**40.0	23
Total Hardness	**79.0	45
Activated silica as reagent—ppm	**4	2

Stable effluent is being produced by Hydro-Treator without further treatment.

** Estimated at time of bidding.

We believe these results speak for themselves. If you'd like further information on Hydro-Treators write for Bulletin #9041 . . . 28 pages of drawings, description and useful data. Please address your request to The Dorr Company, Engineers, Stamford, Conn.; or in Canada, The Dorr Company, 80 Richmond Street West, Toronto 1.

* Reg. U.S. Pat. Off.

MIAMI'S FOUR NEW HYDRO-TREATORS

DORRCO

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PREVENT PARKING METER "FREEZE-OUTS"

WITH

LOCK-EASE®

***Graphited* LOCK FLUID**

Condition your city's parking meters against operating failures due to freezing, sticking or rust. Use LOCK-EASE, a specially compounded lubricant that seals out moisture and dust. Penetrates quickly, leaves a graphited, rust proofing film on working parts. Lowers maintenance . . . prevents loss of revenue and annoyance to public.

- Endorsed by parking meter manufacturers and locksmiths.
- Available in a four-ounce Controlled Flow "drop or stream" container.
- Easily applied through lube holes or keyways.
- An all-weather product to prevent freezing due to moisture, dirt and corrosion.

Order from hardware or auto jobber or write.

AMERICAN GREASE STICK COMPANY
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AGs

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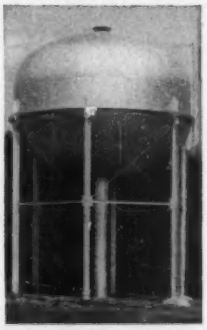

● Whether you want conventional high-pressure units or something *special*—send us your inquiries. COLE can build you the kind of high-pressure tanks or vessels you require—any size, any shape, any metal. Our experience (of almost a century) in the design and fabrication of metal tanks may be of help to you.

Send us your inquiries for tanks of all types. Write for free catalog—"Tank Talk"

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TANKS TOWERS CYLINDERS VESSELS

NEW IMPROVEMENTS
Cable Drum Clutch
Upper Arch Sheave
Automatic Cable Level Wind

OK CHAMPION
Power Sewer Cleaner

Twin rigs take debris from sewer to street in one operation.

Mounted on four wheel trucks—safer—eliminates lifting to position over or pull away from manholes—safer tandem towing.

All Controls at Working End—keeps operator out of passing traffic—allows full vision of work.

Built-in Gear Reduction Ratio—allows better use of engine for pulling power and bucket travel speed.

Fully Automatic Safety Clutch—instant acting—avoids damage to tiles and machines.

CHAMPION CORPORATION
Hammond, Indiana

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Champion Corporation, 4716 Sheffield Ave., Hammond, Indiana
Please send information on new OK Champion Power Sewer Cleaners.

Name.....Title.....

Address.....

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Give yourself a treat next time you head for St. Louis—make your reservation at Hotel Claridge . . . it will be a tonic en-route when you think of the nice hot shower you will enjoy after a busy day and the grand night's sleep in one of the softest beds you ever dreamed of . . . Come for vacation — for business or pleasure . . . but first of all be sure to stay at the Claridge.

PLENTY OF PARKING SPACE

Visit the CLARIDGE LOUNGE
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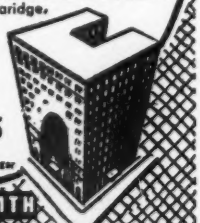

350 ROOMS from $2.75

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LOCUST AT EIGHTEENTH
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prevents wear on seats of

CHAPMAN

Tilting-Disc

CHECK VALVES

Here's the check valve with the balanced disc which is cushioned to a quick and quiet closure by the flow of gases or fluids as you can see in the cross-section at the right.

This smooth action prevents undue wear on seats, hinge pins and bearings . . . *and on your maintenance budget!* For there's no loosening of lines by vibration, no opened joints or ruptured pipes.

What's more, head losses are 65% to 80% less than conventional swing-type checks. Available in iron or steel in all standard pipe sizes. Get the complete story on this and other cost-cutting features of Chapman Tilting-Disc Check Valves, in the latest bulletin, No. 30. Send for your copy now.

THE CHAPMAN VALVE MFG. CO.

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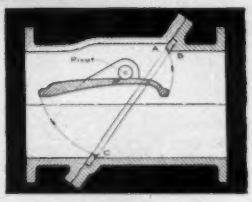

Cross-section of the Chapman Tilting-Disc Check Valve illustrating the way that the balanced disc is supported on the pivot, with arrows showing the travel of the disc. A feature of the design is that the disc seat lifts away from the body seat when opening, and drops into contact when closing, with no sliding or wearing of the seats.

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you KNOW you get PPD*

MODEL 620
BOX & VALVE LOCATOR

Pin Point Detection of Goldak's Model 620, saves you time and money, with immediate location of Buffalo Boxes, Valves, Covers and Buried Metals.

Untiring operation, weighs only 8 lbs. Sturdily constructed, all-weather use. High quality parts assures maximum sensitivity, low operating and nominal replacement costs.

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*PIN POINT DETECTION

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The name GOLDAK, on electronic instruments, eliminates guesswork . . . your assurance of Pin Point Detection at all times, in any kind of weather. Throughout the world, with companies who need instruments that are accurate and durable, first choice is GOLDAK.

MODEL L46
SENIOR
LEAK DETECTOR

Detect costly leaks in water and low viscosity fuel lines, in their exact position. Completely portable, simple to operate. Latest electronic improvements and high quality parts, assures unequalled performance. Save time and labor, eliminate costly leakage with Goldak Model L46.

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Above or below ground —
CAST IRON SOIL PIPE

The silent member of your board of health

Your plumbing code is the silent voter in any meeting of your Board of Health. Its two-fold function is to protect your community's health . . . and its pocketbook. Significantly, like all plumbing codes, it recognizes the importance of **cast iron soil pipe.** *Can you pick up a plumbing code anywhere in the country, that isn't built around* **cast iron soil pipe** *and fittings?*

For Public Health authorities and municipal engineers have long known that **cast iron soil pipe** outlasts any building, offers added insurance against dangers like ground water pollution and escaping sewer gas. Moreover, it's satisfying to know that taxpayers won't have to worry about later street openings, trench excavations, backfill and repaving for jobs that should have been done right in the *first* place.

• • • • •

You know your plumbing code is protecting your community when it gives preference to **cast iron soil pipe** and fittings . . . the plumbing material that has withstood the test of time.

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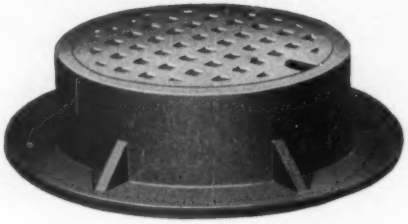

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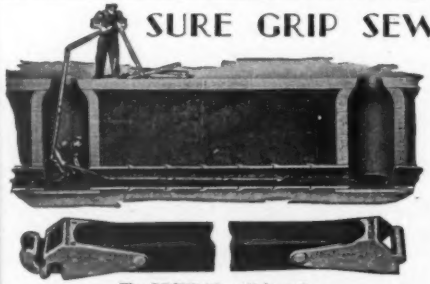
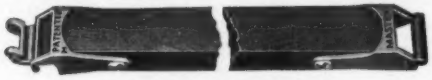


The REGULAR, a light rod.
Fir stock 1¼ x 1¼ inch square.

are joined together with a dual lock forming a rigid chain that will float. They can be coupled or uncoupled upon the street if desired. Made in two sizes.



The MASTER, a heavy duty rod.
Fir stock 1½ x 1½ inch square.

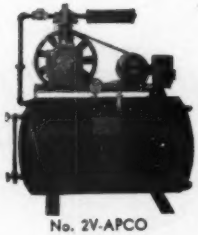
Write for catalog on complete line of sewer cleaning equipment.

EXPANDING SEWER MACHINE CO.
NAPPANEE, IND.

No. IV-APCO

APCO-V-APCO PRIMERS
FOR CENTRIFUGAL PUMPS
AUTOMATIC POWER OR TANK PRIMERS
SINGLE OR DUPLEX UNITS
DUAL DRIVE WITH GASOLINE ENGINE
ALL UNITS ENTIRELY AUTOMATIC

AIR RELEASE VALVES
FOR VENTING AIR OR GASES
17 TYPES



No. 2V-APCO

VALVE AND PRIMER CORPORATION 356 WEST HURON ST., CHICAGO 10, ILL.

For Repairing Badly Pitted or Corroded Pipe Leaks

Skinner-Seal Pressed Steel Economy Clamps repair pitted and corroded pipe — quickly, economically! Heavy, hot-pressed steel construction. Comes in two widths. NARROW — 3½" wide — for pit holes — complete with rubber Cone Plug Gasket, fastened in place. WIDE — 6½" wide — for running corrosion spots, complete with crescent-shaped, pressure-equalizing gasket of special rubber composition for oil and gas use.

M. B. SKINNER COMPANY, SOUTH BEND 21, INDIANA, U. S. A.

SKINNER-SEAL PRESSED STEEL ECONOMY CLAMP

Now—All Your Accounting on One Machine!

The Sensational New

Burroughs Sensimatic

accounting machine

Yes, it is truly amazing the way the completely new Burroughs Sensimatic handles governmental accounting jobs. And there's a good reason—for the Sensimatic was designed with the needs of governmental units in mind.

It's completely new from the ground up—built around a brand new principle, the control panel, or "mechanical brain," that directs the machine automatically through any four accounting applications, in any combination. Control panels are interchangeable instantly and there is no limit to the number that can be used—no limit to the number of accounting jobs a single machine can do!

The Sensimatic makes possible a great improvement in accounting speed, flexibility, and ease of operation. This means faster record keeping, working-hours saved, increased output and, best of all, reduced accounting expenses. The Sensimatic is moderately priced, too.

Get the complete story of this sensational new Sensimatic today. Call your local Burroughs office or write Burroughs Adding Machine Company, Detroit 32, Mich.

HANDLES ALL THESE JOBS—*and more*

Budgetary Accounting • Payroll • General Ledger
Public Utility Billing and General Accounting
Tax Billing • Cost Records

WHEREVER THERE'S BUSINESS THERE'S **Burroughs**

New 17,150-Home Lakewood Park will be supplied by BJ submersibles!

another

BJ

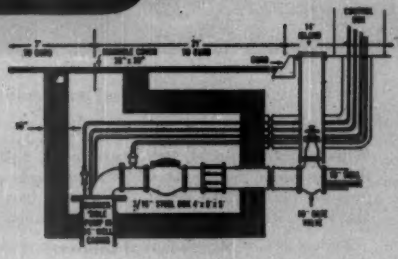
submersible pump

case history

Lakewood Water and Power Co. uses BJ "invisible" pumping stations to service this great housing "city"

LAKEWOOD PARK, just north of Long Beach, California, is probably the world's most modern community. Its 3500 acres of new homes, schools, churches, parks and shopping center are planned to benefit from the newest in design, methods and materials.

Following this pattern, Lakewood Water and Power Co. uses Byron Jackson Submersibles to place all pumps underground and eliminate old-fashioned pump houses. No pump buildings will mar the residential areas or take valuable space from the 153-acre shopping center. Water for Lakewood and neighboring communities is supplied from wells using BJ "packaged" pumping stations submerged below the surface, with pressure tanks and piping wholly or partially underground. These BJ Submersible Pumps—proved in hundreds of municipal installations—greatly reduce real estate and construction costs, need no daily maintenance, and are the best answer to flood, fire, sabotage and other disaster conditions.



UNDERGROUND VAULT is hermetically sealed and houses a hermetically sealed 4-stage, 60 hp BJ Submersible which pumps 1800 gpm against a 100 ft. head.

Lakewood's 70,000 residents will be unaware of silent submersible pumping stations such as this one beneath the street. Note control panel located in island at right.

Find out how BJ Submersibles can benefit your water supply program. Contact your local Byron Jackson office or write direct.

Byron Jackson Co.

Since 1872

P. O. Box 2017, Dept. 50, Terminal Annex, Los Angeles 54, Cal.

OFFICES IN PRINCIPAL CITIES

Let Internationals carry part of your load

If watching the city budget is partly your job, the new International Trucks can take a load off your shoulders. Just as the model illustrated is designed to handle the heavy truck work at minimum cost and with maximum efficiency—there's an International engineered to meet every hauling requirement.

They're tough in every part!

Bring on the hard knocks—International Trucks are built to take plenty of punishment. For example, Loadstar models have inverted "L" type frame reinforcements, heavier rear springs, oversize rear axles, and other features that really pay off on the job.

Talk about economy!

Until you've owned an International, you have no idea just how *low* operating and maintenance on a truck can be. You get the kind of savings that have kept International Trucks *first* in heavy-duty truck sales for 19 straight years!

Easier handling, too!

With an International, tight spots aren't tight any more. Shorter wheelbases, new, wider axle treads, and steering improvements make them the easiest handling trucks there are. You turn in the shortest practical circles.

A cab-full of comfort!

Sure we thought of the driver! He rides in the "roomiest cab on the road," the Comfo-Vision Cab. He gets full front visibility through the one-piece, Sweepsight Windshield. He enjoys more positive control from a more comfortable position.

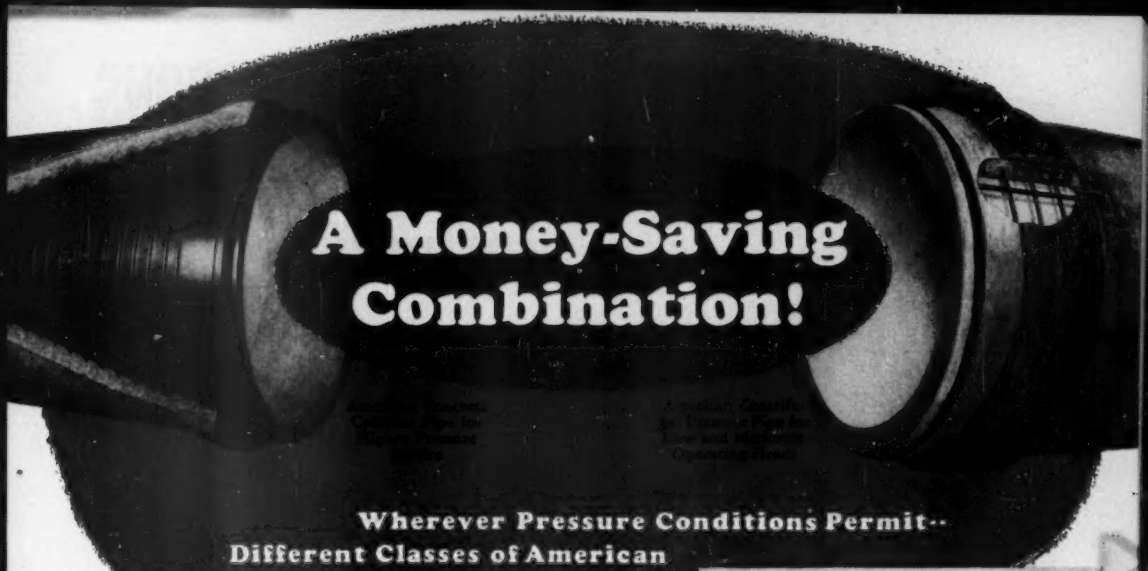
Remember, regardless of the job, there's an International Truck that can handle it better. Get complete information from your nearest International Truck Dealer or Branch before buying any truck for your city.

International Harvester Builds McCormick Farm Equipment and Farmall Tractors... Motor Trucks... Industrial Power... Refrigerators and Freezers

INTERNATIONAL HARVESTER COMPANY • CHICAGO

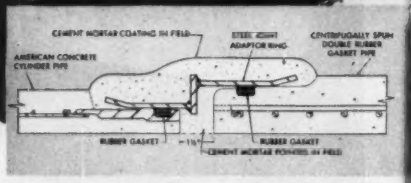
INTERNATIONAL TRUCKS

"Standard of the Highway"



A Money-Saving Combination!

Wherever Pressure Conditions Permit-- Different Classes of American Reinforced Concrete Pressure Pipe Can Be Combined in the Same Water Transmission Line


CEMENT MORTAR COATING IN FIELD
STEEL JOINT ADAPTOR RING
CENTRIFUGALLY SPUN DOUBLE RUBBER GASKET PIPE
AMERICAN CONCRETE CYLINDER PIPE
RUBBER GASKET
RUBBER GASKET
CEMENT MORTAR POINTING IN FIELD

Here's a typical example of the ability of American to meet specific project requirements... to give you a carefully laid out and engineered pipe line. You'll like the simplified planning and ease of installation this feature gives you.

By designing your pipe line to meet such specific project requirements you will achieve...

Greater Economy in Cost!

You know that reinforced concrete pressure pipe gives you the strength of steel and the permanence of concrete... with reductions in initial cost, lower installation costs, sustained capacity, and trouble-free service. Four classes of reinforced concrete pressure pipe are available to meet varying requirements.

So why not use the proper combination of these classes of pipe, where pressure ranges differ, to meet the needs not only of high pressure service but the needs of intermediate and low pressure service as well?

You'll find it the most economical way to plan a major capital investment...

...with Greater Savings in Critical Materials!

The conservative design principles of reinforced concrete pressure pipe are such that economical use may be made of steel and concrete to meet design requirements with appreciable savings in critical materials.

During the present defense emergency, these are valuable savings to make... and, they are savings that ease the problems of procurement, with less drain on the national economy.

So... if you find that the pressure ranges in your line are going to differ widely, give us the opportunity to show you how the combination of different classes of American reinforced concrete pressure pipe can save you money.

How American Concrete Cylinder Pipe Is Joined To American Non-Cylinder Pressure Pipe

A simple adaptor ring provides the transition between the spigot ends of two different classes of pipe.

In all classes of reinforced concrete pressure pipe manufactured by American, the rubber gasket is confined by a joint ring to a definite groove in the spigot end of the pipe, thus assuring the most positive and safest use of the gasket as a water seal under all normal operating conditions.

Recent Typical Installations Where This Feature Is Being Used to Obtain REDUCTIONS IN THE COST OF DELIVERED WATER

San Dieguito Irrigation District, Encinitas, California

City of Whittier, California

City of Pasadena, California

Pomona Valley Municipal Water District (now being installed) Pomona, California

Four Plants to Serve You

American manufactures four classes of reinforced concrete pressure pipe in diameters ranging from 12 in. to 12 ft., and for all pressures related to to modern American waterworks practice.

American PIPE AND CONSTRUCTION CO.

Concrete Pipe for Main Water Supply Lines, Storm and Sanitary Sewers, Subaqueous Pipe Lines
P. O. Box 3428, Terminal Annex, Los Angeles 54, California

MAIN OFFICES AND PLANT—4635 FIRESTONE BOULEVARD, SOUTH GATE, CALIFORNIA
DISTRICT OFFICES AND PLANTS—OAKLAND—SAN DIEGO—PORTLAND, OREGON

"HARLEY-DAVIDSONS have really solved my traffic problems"

says Leonard J. Petty
CHIEF OF POLICE
GREENVILLE, TEXAS

JOHN H. MILLER
MAYOR

CITY OF
GREENVILLE
"Richest Land — Whitest People"
GREENVILLE, TEXAS

January 18, 1951

Harley-Davidson Sales Co. of Dallas
2815 Commerce Street
Dallas, Texas

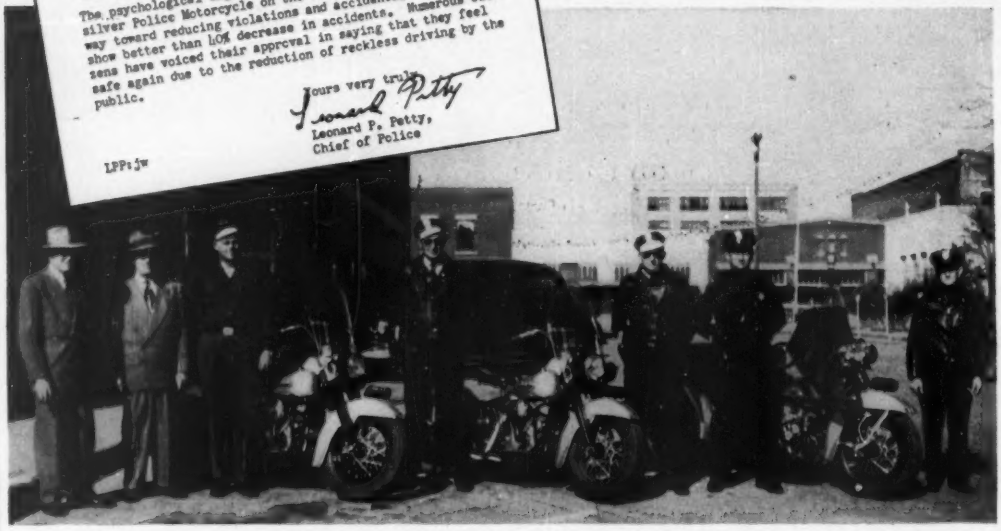
Gentlemen:

At the delivery of the first motorcycle in August, 1950, the officer who took charge of the machine wrote an average of ten moving violation tickets per day. The decrease in this type of violation has dropped almost to one ticket per day without any relaxing of vigilance on the part of the officer. Comment from local business men vitally interested is extremely favorable, more especially from funeral homes and ambulance service.

The psychological angle alone, by the appearance of the silver Police Motorcycle on the street, has come a long way toward reducing violations and accidents. Statistics show better than 10% decrease in accidents. Numerous citizens have voiced their approval in saying that they feel safe again due to the reduction of reckless driving by the public.

Yours very truly,
Leonard P. Petty
Leonard P. Petty,
Chief of Police

LPP:jw



Left to right: Mayor John H. Miller, Chief of Police Leonard Petty, Salesman C. C. Weeks, and Officers G. W. Shields, L. H. Pickle, T. H. Richards, O. C. Montgomery

Typical of the effects of motorcycle officers on curtailing traffic violations and preventing accidents, is the experience of Greenville, Texas, as given in the above letter. In your city, also, the increased use of Harley-Davidson motorcycles will enable your police department to meet today's traffic problems with utmost efficiency, and will help it hold accident rates to a minimum. Ask your dealer to tell you about the latest Harley-Davidson Police Motorcycles, Servi-Cars and Sidecars, and their specialized application to the needs of your city, or write

HARLEY-DAVIDSON MOTOR COMPANY, MILWAUKEE 1, WISCONSIN

HARLEY-DAVIDSON

MOTORCYCLES POLICE BETTER TRAFFIC CONTROL SERVI-CARS

All clear! Owned by the City of Crookston, Minn., this "Caterpillar" Diesel No. 12 Motor Grader with V-plow and snow wing is busy on snow removal. An essential municipal tool, it also earns its keep by building and maintaining roadways. As a military tool, it's essential for airport construction and maintenance, road construction, the establishment of bases and scores of other earthmoving jobs.

HOW TO GET MORE WORK FROM YOUR "CAT" MOTOR GRADER!

HERE's the situation in a nutshell. The speed, versatility and big work capacity that have made "Cat" Motor Graders so essential a year-round tool for municipal use have also made them essential to the defense effort. As military and Defense Rated Orders must be filled first, you may not be able to obtain prompt delivery of new machines. So it's to your advantage to plan now to get more work and longer wear from your present equipment.

"Caterpillar" Motor Graders are ruggedly built for long life. But good care on your part can lengthen that life span by thousands of extra service hours. Here's how:

1. **Follow the recommended *operating* care in your Operator's Instruction Book. Read and reread it.**
2. **Observe the *maintenance* suggestions in the Operator's Instruction Book. They're down-to-earth—experience has proved them practical and effective.**
3. **Anticipate your future replacement parts needs by seeing your "Caterpillar" dealer about them *now*. Don't wait until wear gets beyond repair—many a part can be rebuilt *if* serviced in time.**

You're in good hands when you work closely with your "Caterpillar" dealer. He is anxious to help you solve your problems. He has the skilled mechanics and service facilities to help you lick them.

CATERPILLAR TRACTOR CO. • PEORIA, ILLINOIS

You're the Doctor

Preventive maintenance is good medicine for long life. Right now is a good time to prepare for winter operation of your motor grader. Consult your "Caterpillar" dealer on methods of "winterizing" your machine. Again read your Operator's Instruction Book and refresh your memory on the items of lubricants, fuels and coolants necessary for top performance in bucking winter weather. Don't waste machine life by improper winter care!

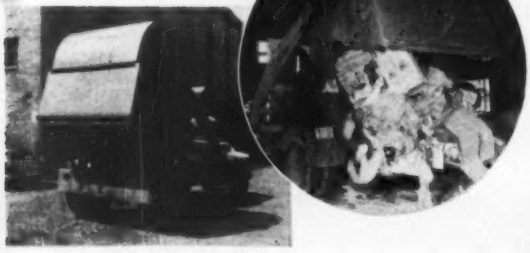
CATERPILLAR

DIESEL ENGINES • TRACTORS • MOTOR GRADERS • EARTHMOVING EQUIPMENT

The DEMPSTER DUMPSTER® Rubbish Collection System

Eliminates 3 to 5 Conventional Trucks

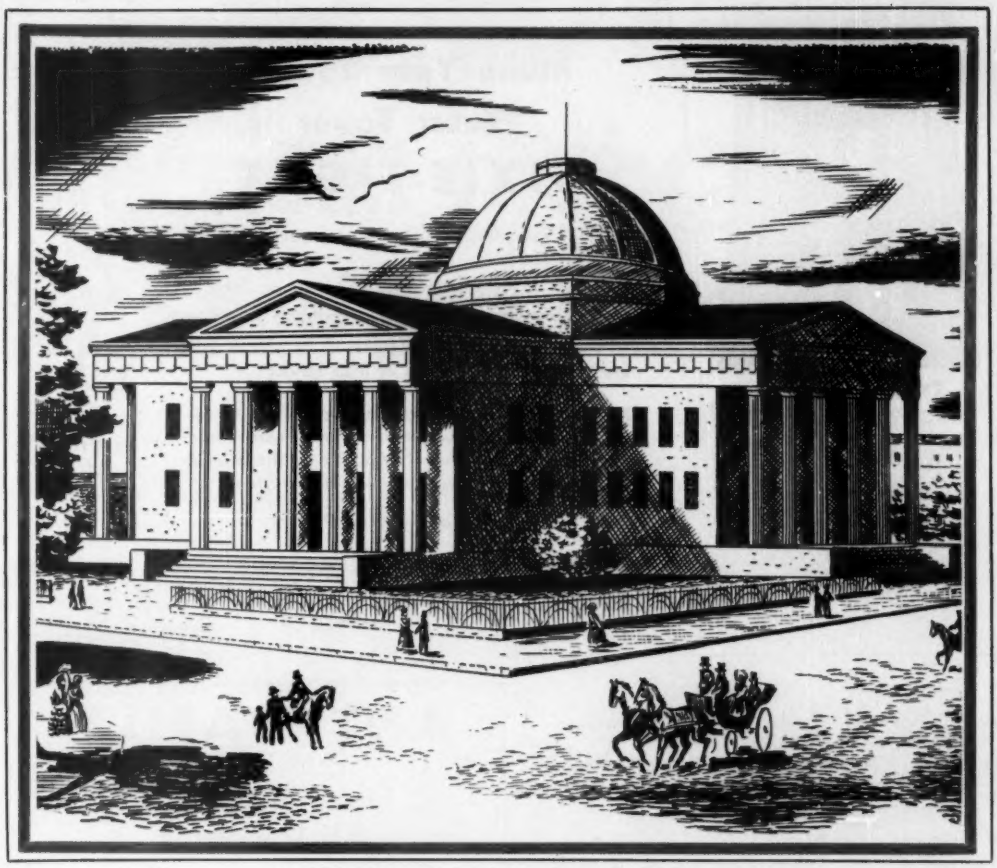
THREE STAGES of quick pick-up, hauling and dumping are shown while Dempster-Dumpster is at work in Norfolk, Va.



One truck-mounted Dempster-Dumpster picks up, hauls and empties, one after another, a multiple number of detachable containers . . . eliminating 3 to 5 conventional trucks and crews. Containers are spotted at hospitals, schools, business establishments, etc. and loaded by the user. Container sizes range up to more than three times the capacity of the average dump truck body. For low cost, efficient and sanitary bulk rubbish collection, your city needs the Dempster-Dumpster System. Manufactured exclusively by Dempster Brothers, Inc.

One Dempster-Dumpster Services All Containers . . . All Designs. . . All Sizes

DEMPSTER BROTHERS, 8121 Dempster Bldg., Knoxville 17, Tenn.



The old courthouse in St. Louis as it looked 100 years ago

St. Louis, Missouri has a cast iron water main in service that was installed more than 100 years ago. That is not surprising as St. Louis is one of our oldest cities, founded by the French and taken over by the U. S. A. with the Louisiana Purchase. Yet this old main is still withstanding the traffic shock and beam stresses imposed by multi-ton trucks and congested underground utility services in a great manufacturing city. More than thirty other American cities have cast iron water and gas mains in service that were installed over a century ago—indisputable testimony to the strength factors of long life inherent in cast iron pipe.

United States Pipe and Foundry Company, General Offices, Burlington, N. J. Plants and Sales Offices Throughout the U. S. A.

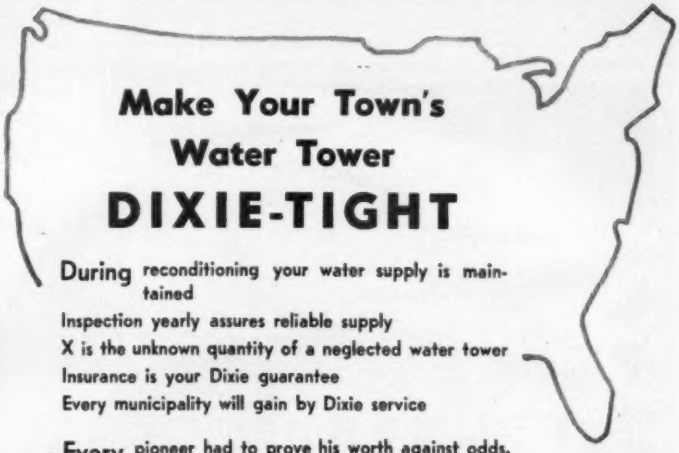
U.S.
cast iron
PIPE
AND INDUSTRIAL SERVICE

NUMBER TWELVE OF A SERIES

The Silent Watchman

REPRESENTATIVES IN THE FOLLOWING CITIES:

SALT LAKE CITY, UTAH	Box No. 1202
DETROIT, MICH.	Box No. 1423
RALEIGH, N. C.	Box No. 251
SYRACUSE, N. Y.	Box No. 681
BUTTE, MONTANA	Box No. 383
GREENVILLE, S. C.	Box No. 1074
TAMPA, FLORIDA	Box No. 1642
RICHMOND, VA.	Box No. 886
NEWARK, OHIO	Box No. 623
FARGO, N. D.	Box No. 1472
COLUMBIA, S. C.	Box No. 472
DALLAS, TEXAS	Box No. 1881
DENVER, COLO.	Box No. 2037
WAUSAU, WISCONSIN	Box No. 682
SAN FRANCISCO, CAL.	Box No. 1445
COLUMBIA, MO.	Box No. 522
SPOKANE, WASH.	Box No. 906
MACON, GEORGIA	Box No. 402
PROVIDENCE, R. I.	Box No. 202



Make Your Town's Water Tower

DIXIE-TIGHT

During reconditioning your water supply is maintained

Inspection yearly assures reliable supply

X is the unknown quantity of a neglected water tower

Insurance is your Dixie guarantee

Every municipality will gain by Dixie service

Every pioneer had to prove his worth against odds. Your first guarantee is Dixie's clients from Coast to Coast and from Canada to the Rio Grande. Your final guarantee is your contract with Dixie.

Thirty-three years of Nationwide Experience

Don't put off longer writing to us.

DIXIE TANK & BRIDGE CO.

3523 Lamar Ave. P. O. Box 14 Memphis 1, Tenn.

Greatest Advancement in Snow Plow History!

TRIO SNOW JET

SNOW JET

Here's big news in Snow Plows! The SNOW JET—a 30" Double Rotary Snow Plow with 7½ H.P. gasoline engine and rugged, never-stop endless track.

Walks through *any* snow at desired throttle speed. A real *Little Giant of the North!* Designed for easy maneuverability; built for the worst that winter can offer. Shifts forward, reverse and neutral. When in neutral there is live blower power for blowing out deepest drifts. Six foot spout swivels any direction.

LITERALLY EATS IT UP . . . AND BLOWS IT AWAY!

TRIO ROTARY SNOW PLOW

Farmers, municipalities, townships, counties and many others need this Six Foot Double Rotary Snow Plow. Designed to move more snow faster, easier, at less cost. Easy to mount on most any truck or farm tractor. Acclaimed by users throughout Minnesota and Dakotas, where winters are most severe.

Write, Wire or Phone for complete literature!

DAHLMAN EQUIPMENT SALES CO.

800-802 N. PRIOR ST. PAUL 4, MINNESOTA

ANTHRAFILT

(Reg. U. S. Pat. Off.)

A Filter Medium For All Purposes

Has outstanding advantages over sand and quartz media:

1. Length of filter runs doubled
2. Only about one-half as much wash water required
3. Less coating, caking or balling with mud, lime iron or manganese
4. Filters out of service less because of shorter wash cycle
5. Better removal of bacteria, micro-organic matter, taste and odor
6. Increased filter output with better quality effluent
7. Not just the top portion, but the entire bed, aids in filtering
8. Can be used in all types of filters using a filter medium
9. A perfect supporting medium for synthetic resins
10. An ideal filter medium for industrial acid and alkaline solutions
11. Decidedly advantageous for removal of fibrous material as found in swimming pool filters

Additional information, recommendations and quotations furnished upon request by

PALMER FILTER EQUIPMENT COMPANY

822 E. 8th St. Erie, Pa.

Engineers and Sales Agents

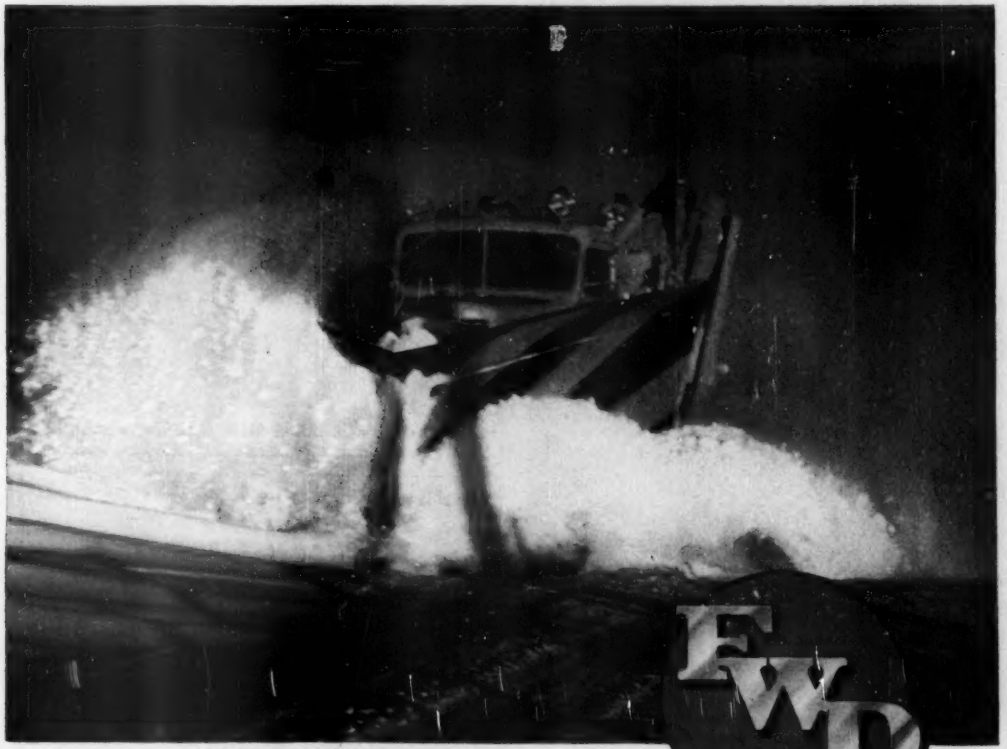
REPRESENTING —

ANTHRACITE EQUIPMENT CORP.

Anthracite Institute Bldg., Wilkes-Barre, Pa.

Choose FWD-Choose America's first choice for snow and ice control

More communities buy more FWDs for snow and ice control than any other 4 x 4 truck! Not only because they lick snow and ice problems better, faster, easier . . . but because when winter ends, FWDs keep right on working, doing other heavy-duty highway and street maintenance jobs — just as fast, just as easy. FWD's better distribution of weight and power means less strain on every job . . . provides up to twice the truck life . . . keeps maintenance down . . . gives more return on taxpayers' dollars. Models from 14,500 to 60,000 lbs. GVW — 4 and 6 wheel drives. See your nearby FWD distributor for full facts or contact FWD direct.



World-wide Sales and Service

The Four Wheel Drive Auto Co., Clintonville, Wis. • *Canadian factory:* Kitchener, Ont.

America's Foremost Heavy-Duty Truck

CUT DIGGING COSTS
with the
new Sherman Power Digger

Patented, actuated bucket gives you selective digging action, better loading, greater versatility.

All-hydraulic action—made possible by heavy-duty hydraulic cylinders—assures efficient performance.

SPECIFICATIONS

Shovel reach below ground surface	8 feet
Digger reach behind tractor	10 feet
Swinging arc	140°
Trench width, standard digging shovel, single cut	18 inches
Digging shovel capacity	3.5 cu. feet
Loading shovel capacity	5 cu. feet
Loading clearance, digging shovel, loaded	7 feet
Loading clearance, loading shovel	10 feet

Standard tractor mounting gives unmatched maneuverability and transportability.

•

Digs ditches, trenches, footings, culverts, basements and other excavations.

•

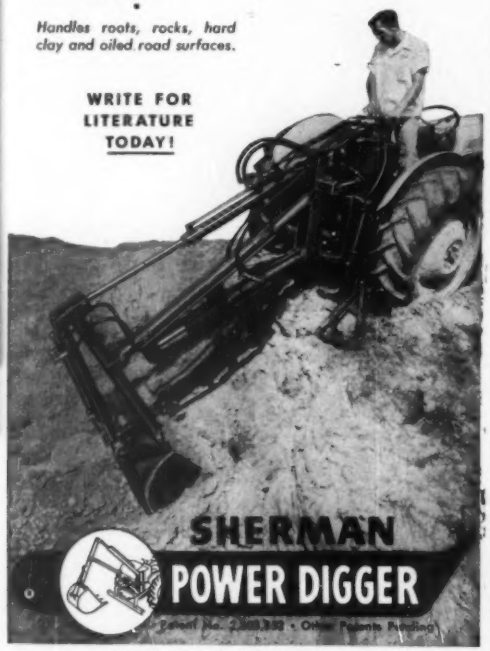
Handles roots, rocks, hard clay and oiled road surfaces.

Works well behind the tractor at any angle.

•

Actuated bucket raises high enough to load standard dump truck.

WRITE FOR LITERATURE TODAY!



Designed, Engineered and Manufactured Jointly by
SHERMAN PRODUCTS, INC. • Royal Oak, Michigan
WAIN-ROY CORP. • Hubbardston, Massachusetts
Sold Exclusively By SHERMAN PRODUCTS, INC.

SHERMAN PRODUCTS, INC., Department No. 111 Royal Oak, Mich.

PUT BIG TREES WHERE YOU WANT THEM

Quick and Easy With a
"ROCKER" TREE MOVER!

You can move 12-inch trees quickly and economically with this patented tree mover. New "rocker" principle lets this sturdy equipment rock back for easy loading and unloading . . . rock forward to balance the load. It can be fitted to any standard truck chassis, removed for other use of truck. Available in two sizes, this mover is now in use in leading parks and nurseries throughout the country. Write for detailed specifications and prices.

WILLIAMS & HARVEY NURSERIES
P.O. Box 7068, Country Club Sta., Kansas City 2, Mo.

SWENSON SIDEWALK SAND SPREADER

A new fast way to cover icy walks with sand, ashes, cinders, salt, etc.

Can be used on road jobs all year 'round.

1-yard hopper

Write for circular.

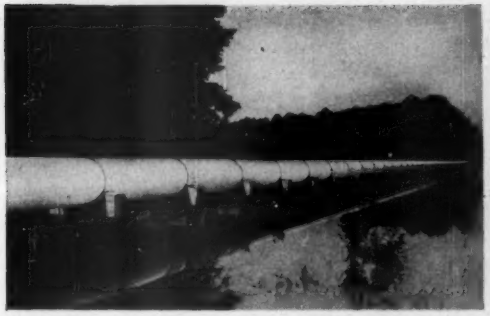
SWENSON SPREADER & MFG. CO., Lindenwood, Ill.

Double-Faced Accident Prevention Signs
A Positive Warning Both Ways
ENAMEL FABRIC

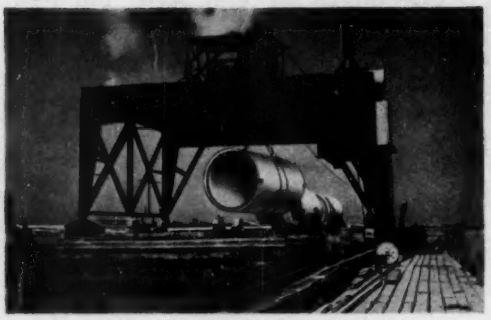
REDTECO (WHITE ON RED) — MEN WORKING — **YELTECO** (BLACK ON YELLOW)

Clear Cut Lettering—Will Not Crack, Peel or Break
Light Weight Permits Safe, Easy Posting
Reflectro Letters For Night Use
WRITE FOR CIRCULAR

THOS. E. COLLINS & CO.
4661 Maryland Ave. St. Louis 8, Mo.

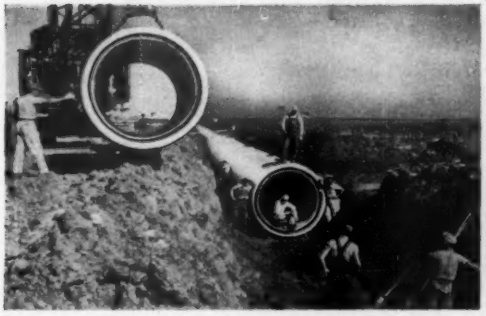


Lee Hall Reservoir crossing, part of the 237,400′ of 24″, 27″, 34″ and 39″ Lock Joint Reinforced Concrete Cylinder Pipe supplying water to the Newport News shipyards.



Loading a section of 120″ Lock Joint Reinforced Concrete Subaqueous Pipe for 18,500′ Nottingham Intake, supplying water for the City of Cleveland.

Build for the future... with
LOCK JOINT CONCRETE PRESSURE PIPE



Tulsa's new water supply line includes approximately 280,000′ of 84″, 72″ and 66″ Lock Joint Reinforced Concrete Pressure Pipe.

Lock Joint plant where 233,000′ of 69″ and 66″ Prestressed Concrete Cylinder Pipe were manufactured for the Rio de Janeiro water supply line.

The building of a water supply line represents a large and extremely important investment. For this reason every effort is made to select the most dependable and permanent type of pressure pipe for the project. Investigation to determine the most reliable pipe available will show that Lock Joint Concrete Pressure Pipe has proven its superiority by years and years of unparallelled performance.

The permanence of Lock Joint Pipe eliminates any necessity for replacement of the line. The conservative design of its steel reinforcement avoids the dangers of blow-out or rupture while providing an ample safety factor for unusual internal pressures and heavy backloads. Dense concrete walls prohibit tuberculation or corrosion and assure extreme durability and life-long high carrying capacity.

In short, Lock Joint Concrete Pressure Pipe provides permanence, efficiency and safety for one of the most vital and essential public utilities. For your next water supply project involving pipe 16″ in diameter or larger, specify Lock Joint—the pressure pipe whose future has been proven by its past.

LOCK JOINT PIPE COMPANY
Est. 1905
P. O. Box 269, East Orange, N. J.
Pressure Pipe Plants: Wharton, N. J., Turner, Kan., Detroit, Mich.

BRANCH OFFICES: Cheyenne, Wyo. Casper, Wyo. • Denver, Col. • Kansas City, Mo. Valley Park, Mo. • Wichita, Kan. • Chicago, Ill. Rock Island, Ill. • Kenilworth, N. J. • Hartford, Conn. • Tucumcari, N. Mex. • Tulsa, Okla. Oklahoma City, Okla. • Beloit, Wis. • Hato Rey, P. R.

SCOPE OF SERVICES—Lock Joint Pipe Company specializes in the manufacture and installation of Reinforced Concrete Pressure Pipe for Water Supply and Distribution Mains in a wide range of diameters as well as Concrete Pipes of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous Lines.

"90° above or sub-zero, we can rely on our HEIL Dump Units

to meet any emergency of street and highway repairs and maintenance"

—says Louis H. Dillenburg, highway commissioner, Shawano Co. Highway Dept., Shawano, Wisconsin.

★ Heil reinforced body can't sag!

★ Heil hoist and pump assure fast dumping!

★ Heil design saves weight — permits bigger loads!

Many an official agrees that Heil Bodies and Hoists pay out in public service. Fifty years of experience equip Heil to build dump units that stay on the job with less maintenance and repair expense.

There's a Heil unit that meets *your* requirements. Heil hoists fit any truck chassis. Hoisting capacities range from 8,000 to 90,000 pounds. Heil bodies are available in all popular sizes.

Specify *Heil* on your next bid for equipment. Write for latest bulletins.

THE HEIL CO.

DEPT. 4312I, 3043 WEST MONTANA STREET
MILWAUKEE 1, WISCONSIN

Factories: Milwaukee — Hillside, N. J.
District Offices: Hillside, Washington, D. C., Atlanta, Milwaukee, Detroit, Chicago, Kansas City, Dallas, Los Angeles, Seattle BH-174

Heilliner 2-wheel Tractor and Scraper

Heil Scrapers

Heil Dozers

Heil Platform Conversion Hoist

AGENTS:

Good, exclusive territories are open for fast-selling "FERRO" signs. Every city needs these highly visible porcelain enamel signs.

"FERRO" signs are nationally known, tested, *proved.* Finest quality steel, deeply embossed, finished in brilliant, permanent porcelain enamel.

If you have allied lines and a following, write today for further information.

FERRO ENAMELING CO.
1100—57th Avenue Oakland 3, Calif.

Auto-Steam Aeroil VAPOR CLEANER

- 100 lbs. steam in 90 seconds
- Fully automatic
- Cleaning compounds proportionately delivered by lever
- Back flush attach.
- Complete control at gun
- High pressure rinse
- Free bulletin No. 900

Aeroil Products Co., Inc.
5 Wesley St., S. Hackensack, N. J.
Chicago • Dallas • Seattle • Jacksonville
Los Angeles • Pittsburgh • San Francisco
Dedham (Mass.) • Forty Fort (Pa.)

LEADITE

FOR JOINTING CAST-IRON WATER MAINS

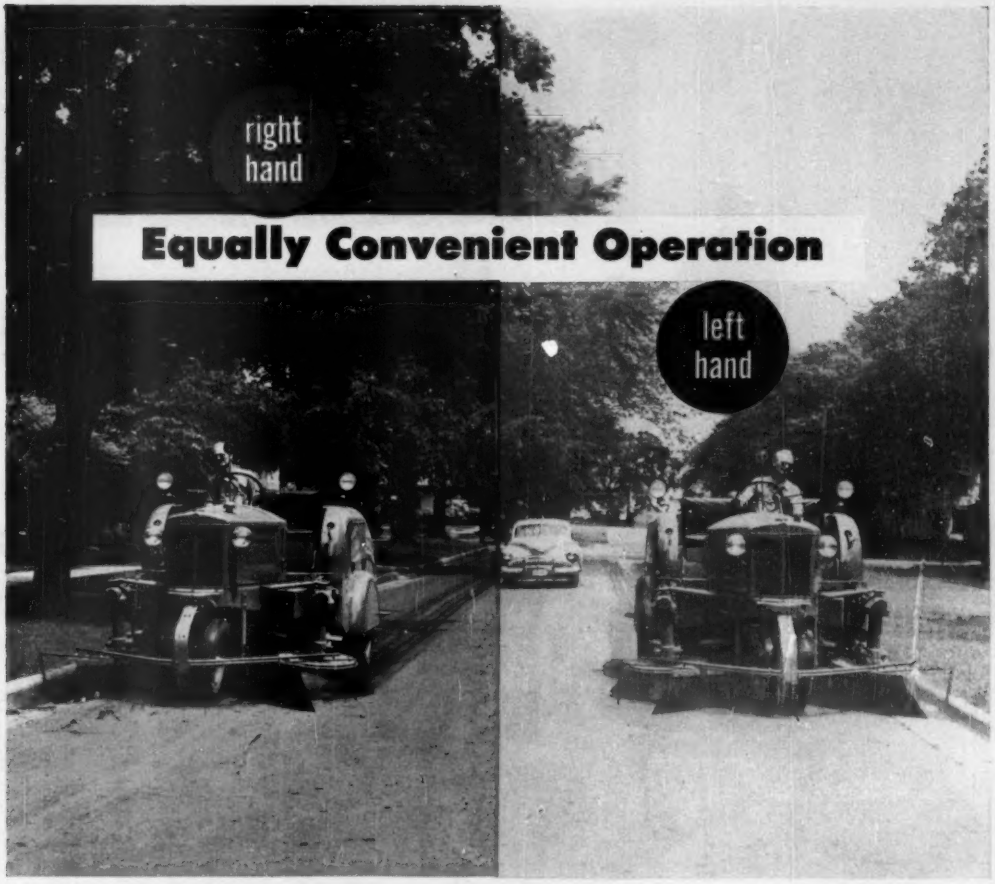
Melted and Poured ***No Large Bell-holes to Dig***

Saves at Least 75%

Leadite is shipped in powder form, packed in sacks of 100 lbs. net each. Leadite tested and used for over 50 years • Leadite joints improve with age.

Be sure it is Leadite and accept no imitations

THE LEADITE COMPANY
Girard Trust Co., Bldg., Philadelphia 2, Pa.



separated pavement—one-way streets—island areas

The Double Gutter Broom Model "40—*is Your Best Buy!*

Best, Because there are no "blind spots." The operator has a perfect view of the gutter broom and the entire street . . . works with maximum efficiency and safety.

Best, Because with a full width seat up front, special driving and steering controls are not needed . . . the operator simply slides over on the seat a bit.

Best, Because the Model "40" can be purchased with a single gutter broom, and a second added later, as the need arises, at very little cost.

AUSTIN-WESTERN COMPANY *Subsidiary of Baldwin-Lima-Hamilton Corporation* AURORA, ILLINOIS, U.S.A.

BALDWIN BLH LIMA-HAMILTON

Austin-Western

SINCE 1859 — PIONEER ... CONSTRUCTION EQUIPMENT

Trades in

PREPARES THE SITE—International crawler power and the Bullclam bucket carve out long trenches to bury the piles of refuse.

SPREADS THE REFUSE—The powerful Crawler-Bullclam goes after the dumped garbage, spreading it out in the trench with the long Bullclam front. Speed of the unit keeps it working well ahead of collection trucks.

CRUSHES AND COMPACTS REFUSE—Rolling over the strewn refuse, the rugged crawler uses the specially curved Bullclam front to crush, smash and iron out the trash.

Old Trash Fire

How the "one-man sanitation squad" helped Lincoln, Illinois, get rid of a 50-year-old burning dump

Just two years ago, the people of Lincoln, Illinois, put out the fire on a mountain of burning garbage and gave the refuse job for the entire city to one machine.

Since 1898, the city dump had been an eyesore. Rats and flies infested it.

Then Lincoln switched to the sanitary land fill method.

An International TD-14A with a Drott Bullclam went into action. The rats and flies disappeared. So did the smoke and smell—and more refuse is disposed of than ever before.

Here's how this one-man sanitation squad does the job:

The big Drott Bullclam, powered by all the rugged force of the International crawler, digs in, scoops out the excavation. It tackles the refuse as the trucks dump it, crushing, smashing and grinding the bulk flat beneath the specially curved Bullclam front. Then it spreads and grades the cover dirt to finish the job.

Here you have it—the ONLY one-man unit specifically designed to do the complete sanitary fill job. You can get rid of open dumps—save valuable land—cut disposal costs, with the fast-working Drott Bullclam on an International crawler. Ask your International Industrial Distributor for information.

Drott Manufacturing Corporation, Milwaukee 8, Wisconsin
International Harvester Company, Chicago 1, Illinois

GRADES AND LEVELS THE FINISHED AREA—Each night the big red International crawler covers the day's compressed garbage with a dirt layer and then levels the ground with the big Bullclam bucket.

BULLCLAM BY

DROTT

POWER BY

INTERNATIONAL

POWER THAT PAYS

SIMPLICITY of AMERICAN METERS

THE DISTINGUISHING FEATURE

All water meters are sold today under approximately the same claims of quality and accuracy. How then shall a buyer choose intelligently the best meter? Price may or may not be a criterion.

The one important variable among water meters today is simplicity of design. The meter which does its work with the fewest parts is the most efficient, the most advantageous over many years. That meter is the American.

Ask for complete data.

BUFFALO METER CO.

2902 MAIN STREET, BUFFALO 14, NEW YORK

It Pays to Remember...

- Model 10 Automatic Signals, replacing watchmen or manually operated gates, effect savings up to 100% of their original cost, during the first year of service.
- Model 10 Automatic Signals cost only a fraction as much as grade separation, yet they provide comparable protection. Unlike grade separation, Model 10's offer an *immediate* solution to the safety problem.
- Model 10 Automatic Signals expedite the fast flow of traffic on both rail and highway. In numerous cases, faster train speeds have been authorized at Model 10 protected crossings.
- Model 10 Automatic Signals guard busy crossings on nearly a hundred railroads. In the United States and in foreign countries, they're *first choice* of traffic experts seeking maximum protection at minimum cost.
- Model 10 Automatic Signals are *never off duty*. So reliable is their life saving performance, that NOT ONE accident has ever occurred as a result of operative failure on the part of these signals.

Model 10

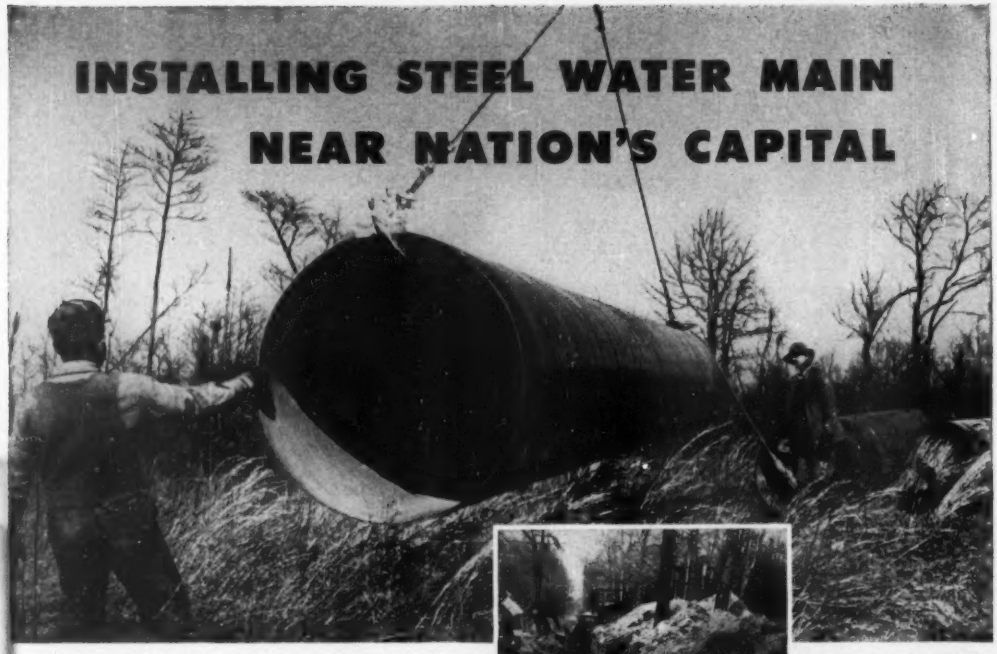
AUTOMATIC GRADE CROSSING SIGNALS
PRODUCT OF
WESTERN RAILROAD SUPPLY COMPANY
CHICAGO 8, ILLINOIS

LEADING MANUFACTURER OF GRADE CROSSING SAFETY DEVICES — MAKER OF RAILWAY SIGNALING ACCESSORIES

Model 10 *design* has been imitated, but Model 10 *performance* never duplicated.

Write for Brochure AC-12-748 a new 24-page booklet entitled, "GRADE CROSSING SAFETY IS YOUR BUSINESS." *It's free.*

INSTALLING STEEL WATER MAIN NEAR NATION'S CAPITAL



Because it is produced in conveniently handled 40-ft lengths, Bethlehem Tar-Enameled Water Pipe is easy to string in the field.

TO KEEP PACE with the continuing development of the area north of Washington, D. C., the Washington Suburban Sanitary Commission has installed a new steel water main extending from Rocky Gorge Pumping Station in Prince Georges County, Md., to Wheaton, in Montgomery County, Md. The line consists of 62,400 ft of Bethlehem Tar-Enameled Water Pipe, in sizes from 31 in. to 43 in.

Here is pipe so durable and dependable, so economical, that more and more water-works engineers are giving it first call for water-line service. Bethlehem Tar-Enameled Water Pipe is virtually leak-proof. It is so resilient that it effectively resists the effects of soil movement after installation. What's more, it is highly resistant to incrustation and corrosion because it is generously coated with a uniformly smooth layer of coal-tar enamel.

It can be installed in any type of terrain. To clear obstructions, offsets can be made readily in the field by flame-cutting and welding. Water-tight girth seams can be obtained by welding, riveting, or mechanical couplings.

Bethlehem Tar-Enameled Water Pipe is made in 40-ft lengths, and in all practical diameters, starting with a minimum diameter of 22 in. i.d. If you would like to have additional details, just get in touch with the nearest Bethlehem office.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by
Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

Heavy coating of coal-tar enamel keeps Bethlehem Water Pipe in prime condition, year after year. Right: Up, up and over the hill! This junior-size mountain proved a formidable obstacle, but not for long.

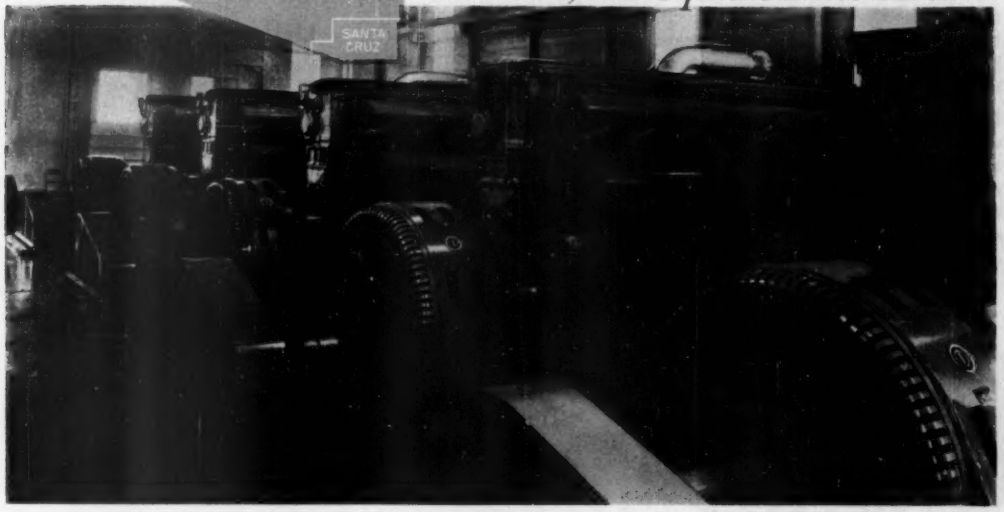
These photographs were taken on a 26,000-ft section of the line for which Ligon and Ligon, Baltimore, were the contractors.

BETHLEHEM *Tar-Enameled* WATER PIPE

BETHLEHEM STEEL

ARIZONA GENERATING PLANT
POWERED BY
5 SUPERIOR DUAL FUEL DIESELS

Serves 16,000 Square Mile Area



Since March, 1950, the ranches, farms, industries, and homes in Pinal and Pima Counties of Arizona have been using the power generated by the Trico Electric Cooperative, a 5000 KW generating plant located 25 miles northwest of Tucson.

Five Superior Dual Fuel Diesels, each rated at 1440 HP and direct-connected to 1000 KW generators, supply the power for this extensive electric system. The Superior Dual Fuel Diesels are operated primarily on natural gas but are equipped for instantaneous change-over to oil by a simple push-button control. The combination of fuel flexibility and Superior Diesel engine efficiency has resulted in surprisingly low cost per kilowatt hour during the first year and a half of operation.

Other power generating installations employing Superior and Atlas Diesels, throughout the U.S.A. and in many locations overseas, substantiate the records of economy and operating efficiency reported at Trico Electric Cooperative. These operating facts and figures provide an interesting basis for analyzing KWH generating costs. Write the Engine Division for information, and for copies of bulletins which describe dual-fuel Superior and Atlas Diesels.

Superior ENGINES

ATLAS Imperial DIESEL ENGINES

THE NATIONAL SUPPLY COMPANY

ENGINE DIVISION

Plant and General Offices: Springfield, Ohio

DIESEL ENGINES • DUAL FUEL ENGINES • GAS ENGINES

COMPARE
the actual Cost and you'll choose . . . TIFA

BEFORE YOU BUY a fog applicator, be sure to find out how much it will cost you to operate . . . how many bugs it will kill per dollar. No question, you'll settle on TIFA!

TIFA WILL SAVE YOU MONEY in overall operation . . . meet your most rigid specifications. For this amazingly effective unit is backed by 10 years' experience in manufacturing fog-machines. It carries the Underwriters' Listing Seal.

EACH TIFA UNIT is compact, portable, one-man-operated. It handles solutions, emulsions, suspensions with a range of droplet control from ½ to 200 microns. It discharges insecticides in a clean DRY fog which spreads quickly . . . permeates tiniest crevices . . . is SURE DEATH to mosquitoes, flies and other insects.

TODD INSECTICIDAL FOG APPLICATOR

Carrying Underwriters' Listing Seal

—•—

A Product of

COMBUSTION EQUIPMENT DIVISION

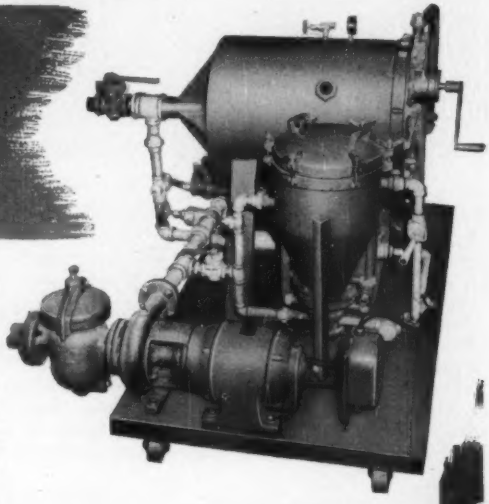
TODD SHIPYARDS CORPORATION

81-16 45th Avenue, Elmhurst, Queens, N. Y.

PLANNED PROTECTION FOR WATER SYSTEMS

SPARKLER FILTERS

. . . Ideal for mobile applications



Contamination or failure of municipal water systems is probably the most serious threat to the survival of a community in the event of disaster. With Sparkler mobile filtration systems, however, every community is assured an adequate supply of safe, pure drinking water.

Sparkler Model SC diatomite filters are designed to filter large quantities of water quickly and effectively—at low cost. They are self-cleaning, and do not need to be broken down for either cleaning or inspection. The entire cleaning and pre-coating operation can be accomplished in 15-20 minutes so that the filter is hardly out of service.

Complete units, including filter, pump, slurry feeder, debris catcher, chlorinator, and gasoline engine can be furnished ready for mounting on truck or trailer bed. Filters are available with rated capacities ranging from 900 GPH to 72,000 GPH. These standard sizes, however, can deliver far greater quantities of water when necessary, although this is not recommended for general service. Write for literature.

Other units, designed for manual portability, may be supplied. Our Engineering Service is available for special design work or for modifications of standard models.

SPARKLER MANUFACTURING CO., Mundelein, Illinois

OLIVER

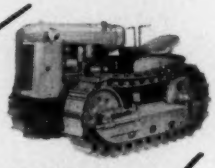
the "CHOICE" Line

When performance under exacting operating conditions . . . where dependability and low operating and maintenance expense are essential, the *choice* of cost-conscious operators is Oliver. Your Oliver Industrial Distributor will be happy to give you all the facts on why this complete line of job-speeding wheel and crawler tractors and matched allied equipment should be *your* choice!

The Oliver Corporation, Industrial Division, 19300 Euclid Ave., Cleveland 17, Ohio.

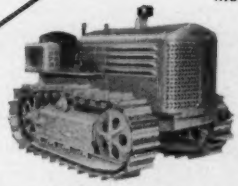
Model "88"—45 h.p. Gas or Diesel

Model "77"—39 h.p. Gas

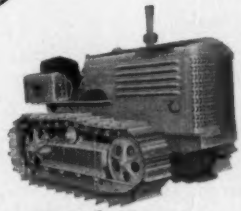


Model OC-3—22 h.p. Gas

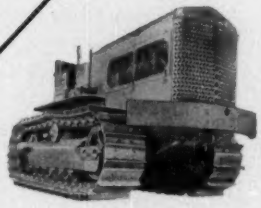
Model "66"—27 h.p. Gas



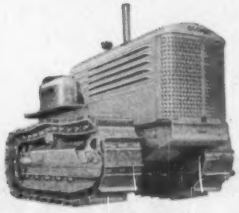
Model A—30.5 h.p. Gas or Diesel



Model B—38 h.p. Gas or Diesel



Model FDE—110 h.p. Diesel



Model D—61 h.p. Gas or Diesel

THE OLIVER CORPORATION

A complete line of industrial wheel and crawler tractors

A "Grand National" Winner... like Cast Iron Pipe...has

The Grand National Steeplechase, over a course of about 4½ miles with 30 jumps, is a rugged test of the *stamina* of a horse. Likewise, the test of time proves the *stamina* of cast iron pipe. For example, in more than 30 of the older American cities, cast iron water and gas mains are now in their second century of service. These sturdy mains are meeting changed conditions undreamed-of 100 years ago—in street traffic and in construction aboveground and underground. The resultant traffic shock and beam-stresses, cast iron pipe has taken in its stride, because of its shock-strength, beam-strength and crushing-strength.

No pipe, deficient in any of these strength-factors of long life, should ever be laid in paved streets of cities, towns and villages.

96%

OF ALL 6-INCH AND LARGER CAST IRON WATER MAINS EVER LAID IN 25 REPRESENTATIVE CITIES ARE STILL IN SERVICE.

Based on the findings of a survey conducted by leading water works engineers.

CAST IRON PIPE

STAMINA!*

* First run in England 112 years ago, the Grand National Steeplechase, over the famous Aintree course of 4 miles, 856 yards, was won in the record time of 9.20-2/5 by Golden Miller in 1934.

CAST IRON

CAST IRON PIPE RESEARCH ASSOCIATION; THOS. F. WOLFE, MANAGING DIRECTOR, 122 SO. MICHIGAN AVE., CHICAGO 3.

SERVES FOR CENTURIES

FLEXIBLES "Clean Up" KANSAS CITY UNDERGROUND!

. . . following the Flood Disaster

30 "FLEXIBLE" power bucket machines have been working in the Kansas City flood area since August! This is no doubt America's *all-time-biggest* sewer cleaning job. To aid the stricken area quickly, many cities from as far away as Ohio, Minnesota and Texas made their "FLEXIBLE" equipment available under "FLEXIBLE" supervision, in addition to those immediately supplied by the factory.

America recognizes "FLEXIBLES" with the Red Cross and National Guard as essential in emergencies.

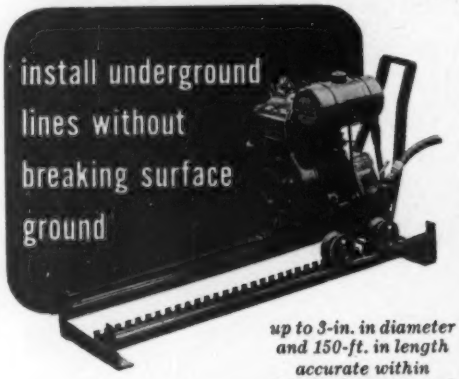
Write for FREE DATA to Dept. A

"FLEXIBLE"

UNDERGROUND PIPE CLEANING CO.
SEWER-ROD EQUIPMENT CO.
9053 VENICE BOULEVARD, LOS ANGELES 34, CALIF.

41 Greenway St. — Hamden 14, Conn.
147 Hillside Terrace — Irvington, N. J.
P. O. Box 465 — Memphis, Tennessee
1115 Delaware Ave. — Fort Pierce, Fla.
141 W. Jackson Blvd. — Chicago, Ill.
200 Magee Bldg. — Pittsburgh, Penn.
66 Kinlry Drive — Rochester 9, New York
29 Cordan Avenue — Roslindale 31, Mass.
801 E. Excelsior Blvd. — Hopkins, Minn.
3786 Durango St. — Los Angeles 34, Calif.
4455 S. E. 24th Street — Portland, Oregon
Francis Hankin — Montreal & Toronto, Can.
351 West Jefferson Blvd. — Dallas, Texas

AMERICA'S LARGEST MANUFACTURER OF PIPE CLEANING TOOLS & EQUIPMENT



up to 3-in. in diameter and 150-ft. in length accurate within 1-inch of target area!

FOR WATER, GAS, SEWER, TELEPHONE, TRAFFIC SIGNAL AND MANY OTHER TYPES OF LINES!

Bore a 3-inch hole at 1½ f.p.m....with automatic warning of underground hazards. The EARTHWORM bores 1000 feet of underground line per gallon of gasoline. Use pipe or conduit as drill stem sections and leave as permanent installations. Save pavement and labor...save thousands of dollars per year...with the proved-in-the-field advantages of EARTHWORM!

IMMEDIATE DELIVERY! SEND FOR DETAILS!

LUBE-JACK CO.
P.O. BOX 1100
Santa Monica, California

What do You expect of a COAGULANT?
TENNESSEE CORPORATION
Ferri-Floc
FERRIC SULPHATE
1. Rapid Floc Formation?
2. PH correction?
3. Taste and odor control?
4. Color removal?
5. Softening?
6. Ease of operation?
7. Bacterial removal?
8. Manganese and Silical removal?
9. Turbidity removal?
10. Economy?
If you are looking for any or all of the above, then the answer is FERRI-FLOC.
We would like to send you, without charge, our new booklet on economical and efficient Coagulation. Just send a card or letter to Tennessee Corporation, Grant Building, Atlanta, Georgia or Lockland, Ohio.
TENNESSEE CORPORATION

HYDROCRANE

S-t-r-e-t-c-h-e-s Day's Output From 75 to 400 ft. Of Pipe Per Man

Here Whittier's H-2 sets water main on a busy street. Note how easily this compact crane works under overhanging wires. Operation is particularly smooth with every work function fully hydraulic.

"We've put our Hydrocrane to work with a 5-man crew and averaged setting 2,000 ft. of 6-in. cast iron pipe (caulked) in an 8-hour day — the best an 8-man crew did without the Hydrocrane was 600 ft. a day," states M. R. Bowen, Director of Public Works, Whittier, Calif. "What's more, on one job, 5 of my boys and our H-2 set 1,100 ft. of 6-in. (not caulked) in two hours. Often the Hydrocrane is slowed up because ditching rigs don't move fast enough."

NEW JOBS ALL THE TIME

"This machine fulfills all our expectations on pipe work — and is finding use on new jobs all the time," Bowen added. Digging house connections is one example. Previously these were hand dug — now the Hydrocrane handles the complete job except pavement breaking — excavating, setting pipe, backfilling — saves at least 50% in labor.

SHUT-OFFS SHORTER — SERVICE BETTER

The Hydrocrane also handles water main leak repairs. While it saves labor here too, the big advantage is speed. With this fast traveling, hard digging unit, mains are repaired and back in service far faster than ever before. Other Hydrocrane jobs include unloading and stockpiling pipe, moving equipment, hauling materials and for miscellaneous excavation.

"Never thought we'd keep her so busy" — this is a typical comment by municipal users. Convince yourself. Write now. Two sizes — ¼-yd. 2-ton, ⅜-yd. 3-ton. Attachments include clamshell, crane hook, material-handling and catch basin buckets, grapples, magnet.

BUCYRUS ERIE HYDROCRANE

SOUTH MILWAUKEE, WISCONSIN

BUCYRUS-ERIE HYDROCRANE DIVISION
South Milwaukee, Wisconsin

Gentlemen: Please send Hydrocrane bulletins to

Name.....

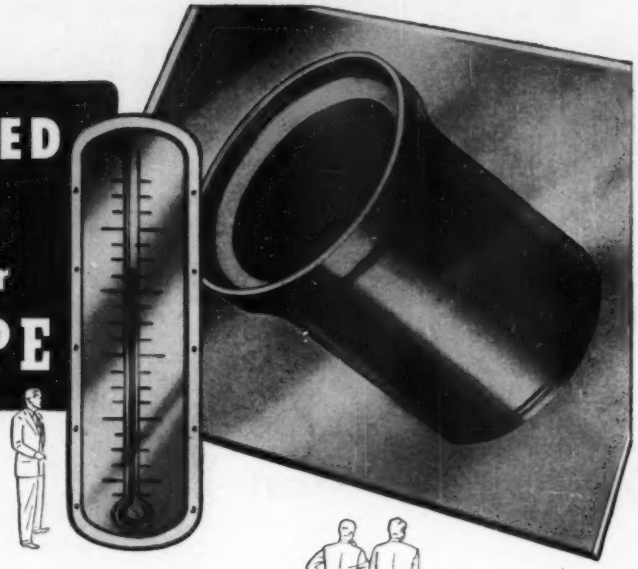
Company.....

Address.....

City..... State.....

97HSS

CONTROLLED DRYING Makes Your CLAY PIPE



- STRAIGHT
- ROUND
- SMOOTH

Nature makes Clay Pipe acid-proof and everlasting. It can't corrode, crumble, or rust away. But science works closely with nature to make Clay Pipe the engineer's top choice for every sewerage and drainage job.

Controlled drying keeps Clay Pipe uniformly straight for easier installation, round and smooth for maximum velocity. Warm air is circulated in and around the Clay Pipe, drying it evenly. Thermostats control the temperature. End result: the best pipe for your sewerage and drainage jobs.

When you specify Vitrified Clay, you're selecting the best efforts of science and nature working hand in hand. Together, they produce for you the *only* pipe that *never wears out!*

NATIONAL CLAY PIPE MANUFACTURERS, INC.

311 High Long Bldg., 5 E. Long St., Columbus 15, O.
703 Ninth & Hill Bldg., Los Angeles 15, Calif.
100 N. LaSalle St., Rm. 2100, Chicago 2, Ill.
206 Connally Bldg., Atlanta 3, Ga.

SPECIFY *Vitrified* CLAY PIPE

CLAY PIPE NEVER WEARS OUT!

Seasons Greetings

AND MANY THANKS FOR YOUR CONTINUED FRIENDSHIP AND SUPPORT

. . . THE CLAY PIPE INDUSTRY

C-451-2

Again...

SANITATION HTH... HELPS OUT IN A JAM

Sanitation HTH is available in cases of nine handy 5-lb. cans and in 100-lb. drums.

A nine-day flood—the result of a heavy ice jam on the Susquehanna River—completely inundated the water works of Columbia, Pennsylvania. In this situation, as in hundreds of similar emergencies, Sanitation HTH was successfully called upon to help maintain a supply of pure water while the regular pumping and chlorinating system was inoperative.

Whether for emergency applications or for your daily sanitizing tasks, you can rely on this ever-ready source of chlorine. Dry, free-flowing and granular, Sanitation HTH is extremely easy to store and to apply—especially handy for sanitizing those hard-to-get-at spots.

Play it safe—keep a stock of this reliable hypochlorination agent handy. And for full information about how you can best use Sanitation HTH write for a copy of "Hypochlorination of Water." Mathieson Chemical Corporation, Mathieson Building, Baltimore 3, Maryland.

Mathieson
CHEMICALS

SERVING INDUSTRY, AGRICULTURE AND PUBLIC HEALTH

LE ROI

Le Roi gives you more for your MONEY!

more utility
more profits

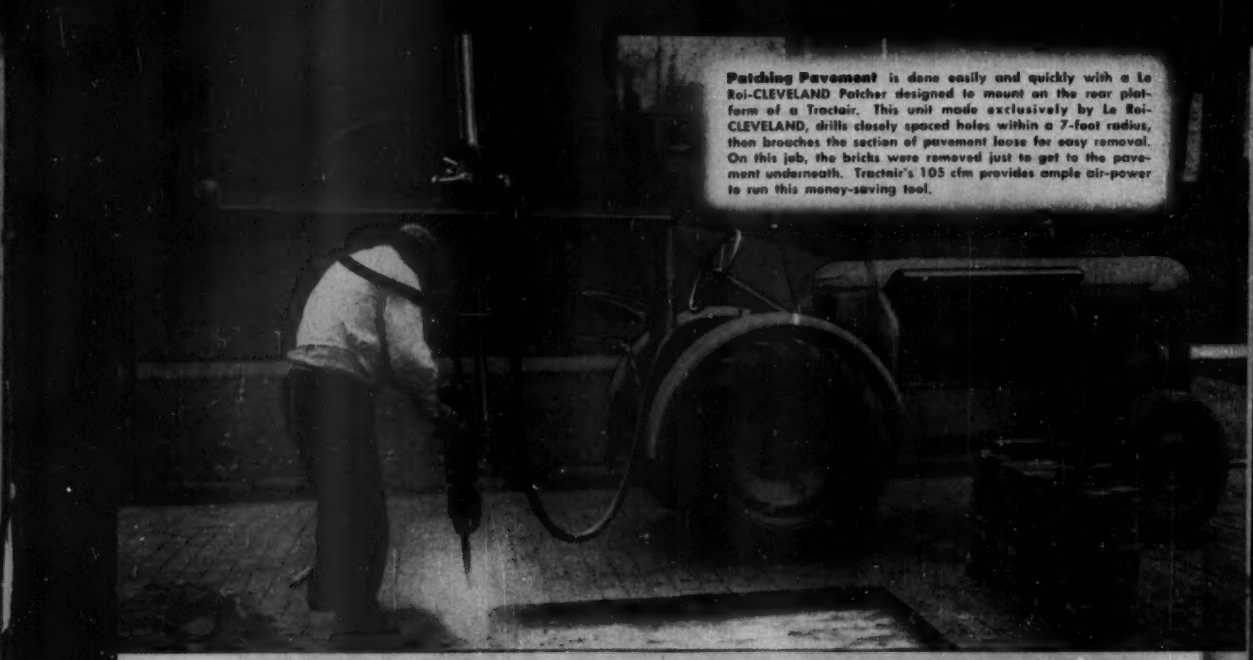
TRACTAIR'S

THE BUY-

Tractair Gets Around thanks to good weight distribution, excellent traction, and a powerful 35 hp. engine. You have economical air-power when you need it despite rough ground, mud, and steep inclines.

Secondary Drilling on a mountain highway relocation and grading job is made easy with Le Roi-CLEVELAND sinkers and self-propelled air-power from Tractair.

Drilling Anchor Holes with an auger air-powered by mobile Tractair saved a utility company $18,000.



Patching Pavement is done easily and quickly with a Le Roi-CLEVELAND Patcher designed to mount on the rear platform of a Tractair. This unit made exclusively by Le Roi-CLEVELAND, drills closely spaced holes within a 7-foot radius, then breaches the section of pavement loose for easy removal. On this job, the bricks were removed just to get to the pavement underneath. Tractair's 105 cfm provides ample air-power to run this money-saving tool.

-for Money-saving Usefulness

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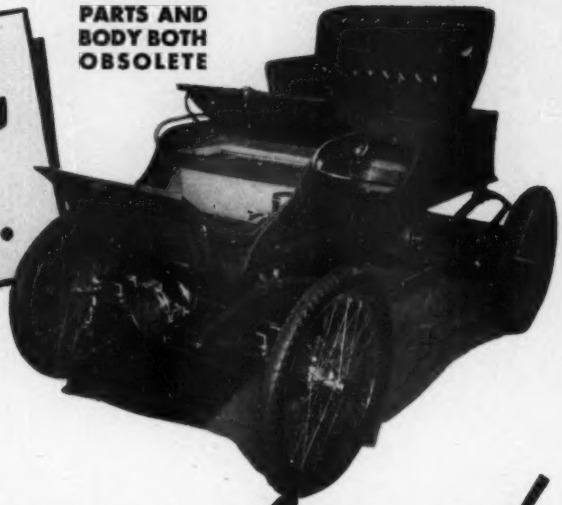

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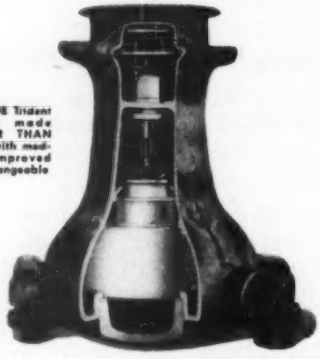

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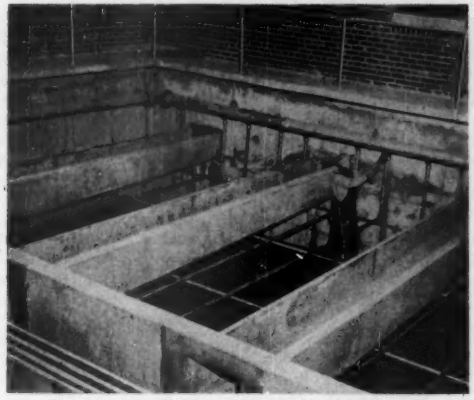


The new filters have fixed-nozzle surface wash.

CEDAR RAPIDS, IOWA

Water-Filter Plant Features Split Treatment

H. F. Blomquist Filter Plant, dedicated to honor lately retired Superintendent, has unusual flexibility of operation — treatment softens water and removes turbidity — the present construction doubles plant capacity

Harry Jordan, national secretary of the American Water Works Association, directs attention to the dedication plaque. With him are former Mayor J. F. Rall, left, AWWA Past President Jack Hinman, and H. F. Blomquist, right.

ON PAGE 105 of THE AMERICAN CITY for January 1950, there appeared a description of a project, then in progress, to double the size of the Cedar Rapids, Iowa, water-filtration plant. The addition, delayed somewhat in its construction, was completed and went into operation last September.

This plant, by official action of the City Council, honors its long-time Water Works Superintendent, H. F. Blomquist, only recently retired.

The dedication of the H. F. Blomquist Filter Plant was performed with fitting ceremonies on September 26, 1951, at a meeting of the Cedar Rapids Engineers Club, held at the plant.

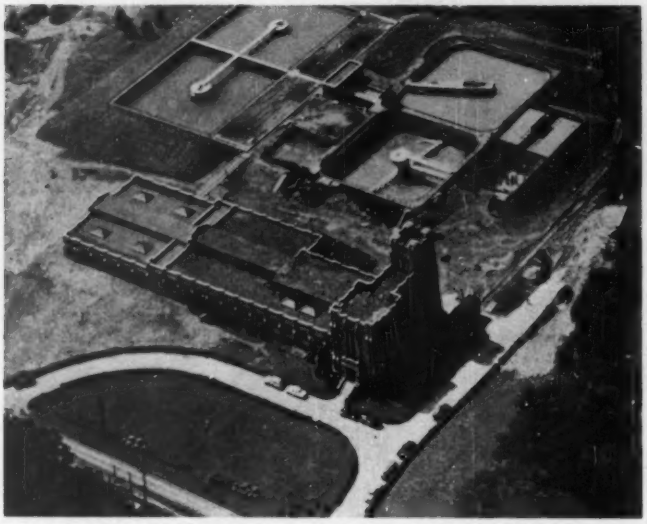
By LEO LOUIS
Water Superintendent
Cedar Rapids, Iowa

Harry E. Jordan, secretary of the American Water Works Association, represented that organization, of which Mr. Blomquist is national director from Iowa. Jeck J. Hinman, a past president of the A.W.W.A and a long-time friend of Mr. Blomquist's, described the conditions that prevailed in Cedar Rapids in 1920, before Mr. Bloomquist was employed as Superintendent, and which led up to his appointment.

Mr. Blomquist served as Superintendent from 1920 until late in 1949, when he retired. During that time, he planned and constructed many improvements to the distribution system as well as the present filtration plant, built in 1929. He also planned the addition to the plant, but retired shortly after the beginning of construction.

The dedication ceremony was also highlighted by the presence of Dr. Edward Bartow, Professor Emeritus of the State University of Iowa, who, in addition to Mr. Jordan and Mr. Hinman, is a past president of the American Water Works Association. Thus, three former presidents of that association were in the audience at that meeting.

The treatment-plant addition doubles



This is the way the plant looks today. The old clarifier, right, has a new sludge-removal mechanism. The two new clarifiers, left, have covered, slow-mix basins. The plant building has been extended to receive new filters.

the capacity of the plant, increasing it from 12 mgd to 24 mgd. The average pumpage in Cedar Rapids is approximately 8 mgd, but the maximum pumpage has frequently been nearly 13 mgd. The new treatment units, in addition to increasing the detention time in the plant, also offer needed flexibility in treatment facilities.

Combines Softening and Turbidity Removal

The city gets its water from the Cedar River, and softens it as well as removes its turbidity. The raw water's average turbidity is reduced from 145 ppm to zero; its total hardness, from 192 ppm to 88 ppm, and its coliform index, from a mean probable number of 10,845 per ml, to zero.

The river originates in southern Minnesota 150 miles or so above Cedar Rapids. Its flow is adequate at minimum stages, but a low-head dam provides a pool of water over the raw-water intake pipe. The intake pipe flows into a raw-water suction well which supplies three low-lift centrifugal pumps. They are American Well Works pumps with capacities of 4.5, 7.5, and 10 mgd respectively. Activated carbon and copper sulphate, when needed, are fed into the raw water at this point. An Omega "Rotolock" carbon feeder with a capacity of 100 pounds an hour is used here. The raw-water is pumped through a 30-inch cast-iron main about four-fifths of a mile from the filtration plant.

Formerly, the 30-inch line fed either of two pre-mix basins, which could be operated in conjunction with other basins in parallel or series. Ordinarily this former operation was in series with the raw water entering one of the pre-mix units, located in the chemical-feed room. Alum and lime were fed into the water at this point. The pre-mixed water then flowed to the slow-mix basin, through the south Dorr clarifier, which was equipped with a mechanical sludge scraper, and into a by-pass flume which returned part of the water to the chemical-feed house where more chemicals could be added in the second pre-mix basin. Carbon dioxide gas, obtained from the flue gas from two oil-fired boilers, was piped into this by-pass flume for primary recarbonation. Part of the water was returned directly to the north slow-mix basin, where it mixed with water returning from the second pre-mix basin.

Chlorine, ferric sulphate, and soda ash were the most common chemicals used in the secondary coagulation. After the secondary slow mix, the water flowed through a second clarifier, not equipped with mechanical sludge removal. It then passed through a secondary recarbonation basin and into the filter house.

Short-Circuiting Difficulties

Each of the old clarifiers has a capacity of 1,000,000 gallons, or a detention time of 2 hours each at a 12-mgd rate and 3 hours each at an 8-mgd rate. With the slow-mix basins, the old plant theoretically provided a detention time of 5½ hours at a 12-mgd rate and approximately 8 hours at an 8-mgd rate. However, it was very apparent that short-circuiting occurred in both the slow-mix basins and the clarifiers, which had cross-flow from the west to the east sides.

The new addition to the plant not only provides wide flexibility in coagulation and softening procedures, but also prevents short-circuiting of flow and provides much more adequate detention periods. The 30-inch raw-water line from the low-lift station is connected to the two pre-mix basins in the chemical-feed house by two 30-inch mains, so valved and designed that either can be used singly or both in parallel, and also to a 30-inch by-pass line which connects directly to the newly constructed basins. This latter line is also connected to the mains leading between the pre-mix basins and the slow-mix basins, so it is possible to by-pass the old clarifiers with either raw water or raw water mixed with chemicals. The two 30-inch lines connected to the pre-mix basins are equipped with individual venturi meters so that the flow of water can be split accurately between the two pre-mix basins. So far, however, it has proved easier to flow all water through one of these basins, thus eliminating the necessity of splitting the chemical feeds.

The water leaving the pre-mix basins ordinarily has received lime and alum and some chlorine. The flow is then split between the two old slow-mix basins, and from there the flow is in parallel to the two old clarifiers. The old north clarifier is now equipped with Dorr clarifier equipment, including a center-feed duct and sludge scrapers. New weir troughs were constructed around the periphery of the basin to collect the settled water.

A sludge pump of the diaphragm type, manufactured by the Dorr Company and having a capacity of about 50 gpm, pumps sludge from the center hoppers of the old basins to a sewer draining to a slough west of the plant.

Chemical Feeding

The settled water from the old basins flows to two recarbonation basins for preliminary recarbonation. Ordinarily, the water will flow through these recarbonation units in parallel and on into two rapid-mix basins equipped with vertical, high-speed, propeller-type mixers made by International Engineering, Inc. Here chemicals can again be added. The chemical solutions flow through hose and pipelines located in a 400-foot tunnel between the chemical-feed house and the rapid-mix house. Part of this tunnel is new and part is the old return duct formerly used in

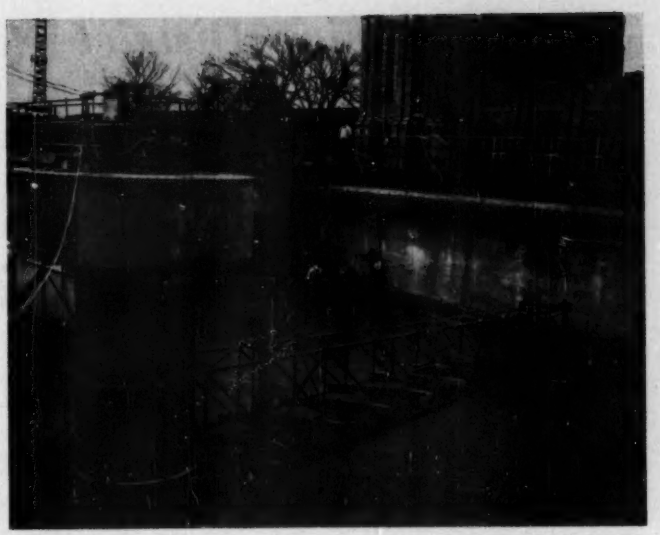
operating the old basins in series. A sufficient number of chemical lines is available to feed all of the chemicals used in plant operation. However, in normal operation, chlorine, soda ash (when needed), and ferric sulphate are fed into the new rapid-mix units.

From the rapid-mix units, the water flows into the two new slow-mix basins equipped with Jeffrey Floc-trol mixing units. These basins are rectangular in dimension and are covered. The water flows from conduits located between the units to the outer ends of the basins.

Concrete ducts carry the water from the ends of the slow-mix units beneath the new clarifier basins to the center wells of each, where it rises and flows outward to weir troughs around the periphery. The new settling basins are also equipped with Dorr clarifier units and sludge scrapers. Sludge is usually pumped from these basins by a Dorr sludge pump to the sewer mentioned previously, but also can be returned to the new rapid-mix basins.

The new basins are similar in size to the old units, but eliminate much of the short-circuiting previously noted, thus affording a considerable increase in detention and contact time. The theoretical detention time in the plant is now 6 hours at 24 mgd, 12 hours at 12 mgd, and 18 hours at 8 mgd.

In the pipe gallery, the filter controllers were mounted vertically to provide a substantial saving in space.



A major improvement was the placing of sludge-removal equipment in the old clarifiers for the first time.

As previously mentioned, considerable flexibility in treatment processes is available with the new units. During times of high turbidity in the river water, coagulation alone can be practiced in the first set of basins, and lime softening accomplished in the second set after clarification. Milk-of-lime solution can flow through two 4-inch lines in the chemical-feed tunnel into the rapid-mix units. These lines can be kept clean with a special "ferret" or "go-devil" made of flexible discs threaded on a flexible wire spring. This device is forced through the lime lines by water pressure, and the wire spring permits it to easily follow the curves in the pipe. The unit was designed by the consulting engineers, with the help of the plant maintenance crew, and made by the contractor.

The secondary softening treatment is particularly advantageous during periods of high color when it is necessary to coagulate the water at a low pH to remove the color.

The new slow-mix and clarifier basins can also be operated in series by the use of a by-pass duct connecting the effluent of the new north clarifier with the effluent of the new south recarbonation basin. This method of treatment is particularly used when coagulation alone is practiced in the old set of basins. Thus, the coagulated and settled water passes into the new north recarbonation basin, in which the carbon dioxide can be discontinued; the lime and more alum are added in the north rapid-mix unit; the water is mixed in the north slow-mix basin and settled in the north clarifier; it returns to the new south recarbonation basin, where carbon dioxide is added; flows to the south rapid-mix unit, where ferric sulphate, chlorine, and soda ash can be added; is mixed again in the south slow-mix basin, and is finally clarified in the new south clarifier.

This system of series operation can also be used to great advantage at certain times when sludge can be returned to the rapid-mix units and raw or preliminary-coagulated water by-passed into the south recarbonation basin to mix with fully softened water from the new north clarifier. This "split" treatment affords a stable water with less carbon dioxide.

At other times, a small amount of raw water can by-pass the first set of basins and be mixed with the water entering the secondary slow-mix units to provide some turbidity to facilitate secondary coagulation and settling of insoluble carbonates.

When Basins Are Out of Service

The raw-water by-pass line is also of value in case the old basins are taken out of service. Either of the old basins can be taken out of service separately by closing stop planks or gates, and either of the new set of basins can be out of service without interfering with the operation of the other. Another method of operation would be to use either the old and new north basins or the old and new south basins in series without using the other half of the plant.

(*Continued on page* 176)

Urban Service District Policy

aids planned area development

By SCOTT BAGBY, *Planning Director*
City Planning Commission
Grand Rapids, Mich.

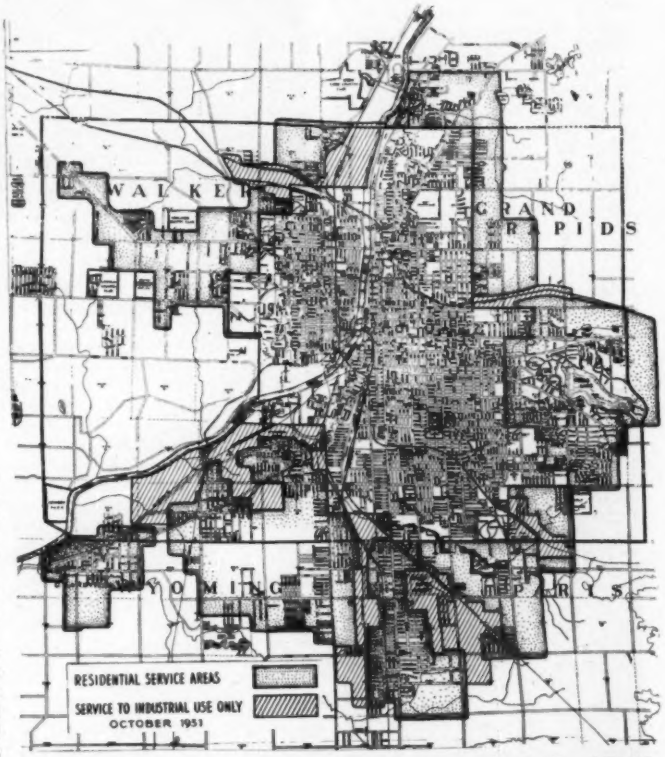
AN UNPRECEDENTED policy agreement on a planned program of service extensions and land use, jointly adopted recently by the Cities of Grand Rapids, East Grand Rapids, and Grandville, and four surrounding townships, is proving a major new tool for guiding the growth of the metropolitan Grand Rapids area.

The action results from a "Working Plan" program adopted last year by the Grand Rapids City Planning Commission which (1) called for the conservation of all sound residential neighborhoods, and (2) recommended establishment of an urban service district in scale with a projected metropolitan-area growth from the present population of 240,000 to one of 300,000 within a 20-to-30-year planning period. The Commission reported on the large costs of permitting residential depreciation in established areas, and also of unintelligently locating residential development in scattered new suburban areas.

Strength of Program

Within the framework of these two basic policies, and with the metropolitan scale determined, every step of the planning program has been geared to do a maximum job. The city's new Zoning Ordinance now becomes a positive tool in conserving all values, and is drawn in proportion to the needs of the entire metropolitan population as a dynamic instrument to guide new growth rather than a negative freezing of past mistakes. The city's new street plan, likewise, shows how present and potential traffic can be accommodated on a relatively few main streets with a primary goal of keeping through traffic off of all other streets, and providing access to and from all portions of the metropolitan area. Within this framework, redesign of existing streets has been suggested and petitioned for by entire neighborhoods to discourage unwarranted through traffic in our living areas.

Redevelopment and rehabilitation studies of 25 problem areas are under way, so that once the reasons for the spread of blight have been removed, the blighted areas themselves can be tackled. Off-street parking and business- and industrial-area problems are also getting attention.



This illustration shows the agreed-upon target service area for the Grand Rapids metropolitan area. It differentiates between the present city boundaries and proposed extensions into the surrounding metropolitan area of services for residential use and services for industrial use. The bold rectangular outline, which touches the city boundaries on the north and south, represents a portion of the belt-line highway plan and is not part of the service-area program.

In developing an urban service policy, the entire metropolitan area was carefully studied as to type and value and density of all existing development. With the scale of the metropolitan area determined, it then became a matter of what were the basic quantities of land needed for all types of development as the community grew an additional 60,000 in population. Developable areas adjacent to areas which would have to be served in any event were carefully checked and presented as a target goal for discussion with developers, the Federal Housing Administration, mortgage and banking companies, and the adjacent governing bodies.

On the assumption that complete agreement among so many diverse gov-

erning bodies would be desirable but highly improbable, the program started off on two basic premises:

1. That 80% of our future suburban fringe development would be done by developers who would prefer to have city services

2. That annexation *per se* offered no magic solution but rather that the primary goal was a sound metropolitan community

The original target plan consisted of a policy adopted by the City Planning Commission and the Grand Rapids City Commission, that fire protection and sewer and water services would be extended into this service band in return for private agreements with developers calling for deed restrictions on use, density, and improvements which would result, from a practical view, in uniform zoning and subdivision regulations.

What the Policy Is

Through the auspices of the Metropolitan Grand Rapids Development Association, all of the surrounding communities were called in and took part in committee meetings on this important subject. As a result of these meetings all of the affected political bodies agreed to a uniform declaration of policy calling for:

- The establishment of a definite urban service line beyond which neither the city nor the townships would extend water or sewer services
- Uniform township zoning beyond this line calling for larger lots
- Uniform subdivision regulations which would require minimum lot areas of 6,000 square feet per family and minimum lot widths of 50 feet where both water and sewer were provided; 8,000 square feet per family densities and 60-foot minimum lot widths in all subdivisions where either but not both public water or public sewage disposal was provided, and 10,000 square feet minimum and 12,000 square feet average with minimum 70-foot lot widths where neither of these public utilities was provided.
- It was further agreed that since the City of Grand Rapids was the logical unit of government to provide the major share of these services in the most economical manner, each surrounding unit of government would submit all subdivision plats to the Service Committee of the City of Grand Rapids prior to official approval.

The illustration shows the agreed-upon target service area. It differentiates between the present city boundaries and proposed extensions into the surrounding metropolitan area. It differentiates between services to residential use and services to industrial use.

The city has now reached complete agreement with the surrounding governmental units as to the exact location of the urban service line, and is proceeding with plans for water and sewage-disposal expansion which would be necessary whether outside services were furnished or not.

All the various governmental units have also agreed to jointly adopt uniform zoning and subdivision regulations.

Townships' Positions

It should be pointed out that the original target policy was drawn with the interests of both the central city and the outlying suburban areas equally in mind. To this end it was suggested that the townships protect themselves from premature sewage and school location problems by adopting acre zoning outside of the service area. The fact that these townships have at this time chosen to adopt quarter-acre zoning instead should not be interpreted by other communities as being a completely satisfactory solution. In the Westchester County area around New York, and in the Washington, D. C. metropolitan area where this problem has progressed to a more dangerous stage, one-half-acre zoning is considered the minimum for township protection against serious future problems, and acre zoning would be much more desirable.

Cities Boost Use of Non-Property Taxes

A RECENTLY completed study by the Municipal Finance Officers Association, "Municipal Non-Property Taxes," points up the trend toward cities' growing reliance on tax levies other than on property, particularly within the last decade.

Property taxes, which in 1942 contributed 64.9% of the total revenue of cities over 25,000 population, were the source of only 53.4% of their revenue in 1949—last year for which all figures are available. Largest increased contributors to cities' coffers were the sales and gross-receipts taxes, which in 1949 made up 9.7% of total revenue collected, as compared to 4.7% in 1942. State aid to cities was up 2.8% in the same period, to total 18.9% of all revenue collected by the cities with a population over 25,000.

As of mid-1951, 564 U. S. cities with a population over 10,000—46%—were using one or more of the nine major non-property taxes, which the Association analyzed in preparing its report. These cities had a total of 1,037 non-property levies in effect, of which 319 were adopted in the last five years.

Analysis

Non-property taxes specifically analyzed by the Association were: motor-fuel, sales, income, cigarette and tobacco, admission, liquor, motor-vehicle license, gross-receipts, business license, and public-utility taxes.

Cities using one or more of these major non-property levies obtained less than half their total revenue from property taxes, while those levying none of these non-property taxes depended on property levies for more than 60% of their revenue.

Income levies are the prime producers of revenue on the basis of per capita yield.

The study reports that income-tax collections averaged $12.93 per capita last year in the 24 cities that now have such levies. Fewer cities use this tax than any other non-property levy, chiefly because legislative authority is lacking in most states. Per capita yield ranged from $19.93 in Toledo, which imposes a 1% levy, to $2.22 in State College, Pa., which also has a 1% income tax.

Rate and City-Size Ratio

The Association concluded that "the yield from income taxes for a given rate increases as the size of the city increases. That is, a 1% rate gives a higher rate of return in a city of over 500,000 than the same 1% rate yields per capita for a city of 10,000."

Sales taxes averaged a per capita yield of $11.71 last year among the 92 cities over 10,000 imposing such levies. Similar to the income tax, the yield per capita increases as the size of the city increases.

A considerable drop, yieldwise, was shown between income and sales taxes, and the third ranking levy, the business gross-receipts tax. Currently, 196 cities use gross receipts of business as a measure for at least some of the licenses they impose. Average per capita yield was $5.08.

Here's the way the other major non-property taxes line up on the basis of per capita yield: motor fuel, $3.76 on the basis of the average tax rate among the cities of $.0198 per gallon; cigarettes, $2.99 on the basis of the average rate of $.024 per pack; liquor, $2.37 in the 35 cities that impose the levy on the commodity itself; public utilities, the most common of non-property levies, $1.86 in the 274 cities using this tax; motor vehicles, $1.71, and admissions tax, $.093.

Water Main Goes Under the River in Slings

River crossing in Boston, Mass., requires special methods to place 64-inch concrete-encased line for the Metropolitan District Commission

THE LINE is 64 inches in diameter, replaces two 36-inch mains that are quite old and are leaking very badly, and must pass under the Charles River. It forms a part of the network of the Water Division of Boston's Metropolitan District Commission. Merritt-Chapman and Scott Corporation, of New York City, is the contractor.

The main is of steel, lined on the inside with 2 inches of Gunite and on the outside with 10 inches of reinforced concrete. The total length of the crossing is 544 feet.

The job wouldn't have been hard if the contractor had been able to bring some of his powerful floating derricks up the river, but a half-dozen bridges across the Charles blocked their path. Apparently the only alternative was that of laying the pipe, piece by piece, and then joining it under water — a slow and costly process.

Two-Level Frame

However, a faster, less expensive method did present itself. Using it, the contractor is laying the line, half at a time, in single units. First, the contractor drove 27 pairs of steel piles to the halfway mark of the river, on the Cambridge side, alongside a deep trench dredged across the bottom to a depth of 30 feet below the surface. The piles, set approximately 12 feet apart in the deeper part of the river and 8 feet apart near the bank, were driven so that their tops were approximately 17 feet above water. Next came a working platform, built between the piles some 3 feet over the water, running from the shore to mid-river; and then a second working platform, built on the top of steel beams strung between the tops of the piling.

With this two-story framework in place the contractor then skidded 34-foot sections of the steel pipe out on the lower platform and welded the sections together. Both ends of the section, approximately 300 feet long, were sealed with watertight bulkheads to prevent flooding when lowered.

How the Pipe Was Supported

For the next step, the contractor placed "carrying slings" around the pipe where it passed between each of the 27 pile bents. The carrying slings were in turn shackled to heavy, threaded steel rods, screwed down through huge bearing-nut arrangements built on top of openings cut in the overhead steel beams. The bearing nuts were mounted on rollers and were fitted with specially designed wing-handled wrenches so that each could be turned by two men working on the top platform above the pipe. This allowed the crews to lower the entire 300-foot length of pipeline evenly and smoothly.

The contractor then set about to encase the pipe in concrete. He did this in two steps in order to keep from overloading the carrying slings. First the lower half of the pipe was encased, then the crews used the wrenches to raise the pipe off the working platform so that the latter could be dismantled. The pipe was partially lowered into the water so that the water helped support the pipe and relieve the load on the carrying slings. The second half of the concrete encasement was poured next, and the complete line was ready to lower into the trench.

This lowering operation went forward by means of the wrenches which turned the bearing nuts. When the pipeline was completely submerged, 14 of the rods from which it was suspended were removed, since the buoyancy of the water more than halved the weight of the section. Once the pipeline was on the bottom of its trench, 30 feet below the surface, divers went down for an underwater examination to see that it was evenly seated. The divers then unshackled the remaining rods from their carrying slings and burned off the portions of the slings which were not imbedded in the concrete.

Cofferdam Required

The next step is the construction of a cofferdam around the shore side of the submerged pipeline. On its completion, the area inside the cofferdam will be pumped out, permitting the contractor to place the last 34-foot riser section "in the dry."

With the Cambridge side of the pipeline in place, the same technique will be repeated to lay the second half on the Boston side of the river. In the final operations, divers will join the two halves of the pipeline at mid-river, a concrete casing will be poured under water to seal the joint, and the trench will be backfilled. The watertight bulkheads at the mid-river and shoreside ends of each of the two sections will be burned out later from inside the pipe.

The line was designed by Stewart Associates of Cambridge, Mass., who are serving as consulting engineers on the project. Harold J. Toole is Director and Chief Engineer of the Water Division of the Metropolitan District Commission, with Charles O. Clark, Associate Engineer, representing him in the field. Charles Richardson, of Merritt-Chapman and Scott's Boston office, is project manager.

Crews man the oversize wrenches used to lower a 300-foot section of 7-foot-thick pipeline to the bottom of the Charles River. Each five full turns sends the pipe an inch deeper. With the wrenches turning in unison, the pipeline was kept in balance until eased to the bottom of the trench below the surface.

In the Lubbock, Texas, sewer installation, ditch depths varied from 4 to 18 feet. At left, a section of pipe is being lowered into a trench. Because of the firm soil, no shoring was needed. At right is a juncture of a feeder line with the main line. A manhole was built around the junction to make the connection complete.

Lubbock, Texas, Installs $1,000,000 Vitrified-Clay Sanitary-Sewer Extension

By JOHN T. HICKERSON
Resident Engineer
Lubbock, Texas

APPROXIMATELY 42 miles of vitrified-clay sewer pipe is being added to the sanitary-sewer system of the City of Lubbock this year. This project represents an expenditure of almost $1,000,000 and is the largest sanitary-sewer project in Lubbock's history.

Clay Pipe Fulfills Requirements

Vitrified-clay pipe was selected for this 221,700-foot project because of its resistance to chemically active sewage. In this system where sewage must be carried on flat grades with minimum velocities, the resistance of a pipe to chemically active sewage was a primary factor of consideration in the selecting of pipe. Clay pipe was used exclusively on this project except under railroad and highway crossings.

Sizes, quantities, and costs, based on 8-to-10-foot cuts, are given in the following table:

6 inch	83,286 feet	$ 1.20
8 "	54,432 "	1.40
10 "	5,595 "	1.60
12 "	960 "	2.00
15 "	5,845 "	3.65
18 "	3,974 "	5.50
21 "	5,759 "	5.85
24 "	31,953 "	7.25
27 "	19,610 "	10.77
30 "	10,373 "	12.15

The low unit prices can be attributed to the soil conditions of this area more than any other one factor. Usually the top 3 to 5 feet of excavation is a sandy soil, and the remaining depth of excavation is in a caliche formation. Most of the caliche is soft and loose enough for removal with standard trenching equipment, although blasting is required on some of the harder and more dense formations. Shoring and bracing is seldom necessary with this type of formation, and no sub-surface water is encountered.

When completed, this project will furnish sewer service to three areas that have recently been annexed to the City of Lubbock. Two of these areas required complete sewer systems, including outfall and collector lines. The other area required only a collector system which feeds into an existing outfall line.

The entire project was financed by municipal bonds. The increased valuation resulting from adding the property in these annexed areas to the city tax rolls so increased the city's future tax revenue that the sale of bonds for the project was justified.

Supervision was furnished by the Department of Public Works (R. L. Oldham, Director), and the City Engineering Department (W. B. Holmes, City Engineer). Consulting engineers were H. N. Roberts and Associates, of Lubbock, for one section; the Hasie and Green Engineering Company, of Denison, for a second line, and the City Engineering Department on the others.

BHC Is Best for Psychoda-Fly Control

ACCORDING to T. C. Schaetzle, Senior Associate Engineer, Akron, Ohio, benzene hexachloride with 11% gamma isomer offers the best results in attacking the psychoda fly that breeds in the trickling filter. Mr. Schaetzle reported his findings at the recent annual meeting of the Federation of Sewage and Industrial Wastes Associations, held recently in St. Paul.

He found the effective rate of application to be 4½ gallons per acre. The BHC should be applied early in the season, with the first applications at double the normal rate.

Although more expensive per gallon, BHC actually is more economical because of its longer periods of effectiveness between dosages. Mr. Schaetzle found that a two-hour resting period after dosing is ample for good contact. He found it best to make a wet application through the trickling filter nozzles, with a contact sprayer of the type used by farmers to spray crops, thus forcing the solution a little below the immediate surface. This increases the efficiency of the BHC.

He found the use of chemicals to control psychoda fly more efficient than flooding because it avoids many operating problems that arise when flooding the filters is practiced. The insecticides used apparently do not affect the efficiency of the filter itself, as no loss in effectiveness has been observed.

Synthetic, natural, and processed rubber are placed in test section on a heavily traveled street alongside a standard asphalt surfacing

Detroit Tries a Rubberized Street

Detroit's new rubberized pavement gets a close-up examination from (left to right) Jan Schmedding, Superintendent of Street Construction for the City of Detroit; H. V. Carlson, Rubber Roads Engineer for the Firestone Tire and Rubber Company; Charles L. Shattuck, Engineer of Asphalt Construction for the Public Works Department of the City of Detroit, and J. R. Moore, of the Engineering Department of the Firestone Tire and Rubber Company.

ONE good way to test a new method is to try it out yourself, according to Charles L. Shattuck, Engineer of Asphalt Construction in Detroit's Public Works Department. Evidence that the admixture of rubber in the sheet-asphalt paving surface will lengthen the life of the pavement, and cure cracking and other difficulties, will get an opportunity to prove itself in America's Motor City under the eyes of a man whose careful work with asphalt had made Detroit recognized as a leader in the work.

Test Sections

The street that has been surfaced with rubber-asphalt is Bagley Avenue, extending from First to Fourth Streets. The rubberized wearing surface, covering the area from the center line of the street to the curb, contains three test sections, each having 60 tons of rubberized paving mixture. GR-S rubber, a synthetic product, was used between First and Second Streets; natural rubber between Second and Third Streets, and processed or reclaimed rubber between Third and Fourth Streets. Delegates attending the recent American Public Works Association Congress in Detroit were among the experts who witnessed the installation.

The rubber was supplied by the Firestone Tire and Rubber Company, at Akron, Ohio. The rubber product is believed to bind the asphalt more tightly into the pavement structure, and to offer more resistance to the softening of the asphalt surface under traffic in hot weather. In cold weather, the rubber tends to retard contraction and, therefore, should help to prevent the damaging effect of frost action.

The mix for the pavement is subject to exacting laboratory tests. Three Braun-Dulin Rotarex extractors are shown determining asphalt content.

Specifications and Procedure

The asphalt-surface mixture meets the following specifications:

Crushed stone (⅜ in. maximum)	45.0%
Sand (grading for asphaltic concrete)	42.0%
Mineral filler (passing 200 mesh sieve)	6.5%
Asphaltic cement (60-70 penetration)	6.5%

The heated aggregate, as dumped in the mixer, has a temperature of approximately 350° F. and is mixed dry for 15 seconds. The rubber powder, amounting to 5% (by weight) of the asphaltic cement in the case of synthetic and natural rubber, and 7.5% (by weight) in the case of processed rubber, is then added to the aggregate in the mixer and is mixed for 10 seconds before the asphalt cement is added. After the asphalt is added, the combination is mixed for 45 seconds. The amount of processed rubber is increased because enough inert materials

Plant foreman Vern Speese keeps stopwatch time while an operator adds packaged natural rubber to the asphalt mix.

The rubberized mix appeared firm and proved to be workable. It presented no spreading or rolling problems.

remain in it so that the actual rubber content is about the same.

Detroit used a Hetherington-Berner asphalt plant (2-ton mixer) to produce the mixture. It is one of four asphalt plant units operated by the city. All operations are carried out under very careful laboratory control.

The rubberized mixture produced no difficulties either in mixing or laying. It seemed to have a firmer appearance as it passed through the Barber-Greene spreader, seemed very workable, and tied into the longitudinal joints very easily. After the 15-ton Buffalo-Springfield tandem roller compacted each layer, it could not be distinguished from adjacent street-paving surface.

The costs of the various types of powdered rubber vary approximately as are indicated in the figures listed below.

Synthetic	$0.26 per lb.
Natural	0.45 per lb.
Processed	0.14 per lb.

Representatives of the Firestone Tire and Rubber Company expressed their opinion that the processed rubber should remain in good supply, despite other shortages.

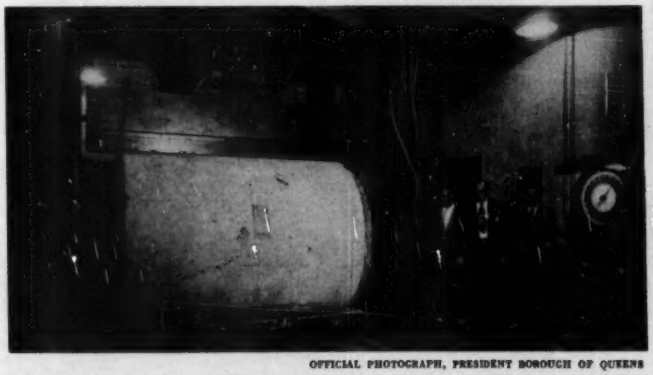
Queens Testing Laboratory Guards Construction Quality

FIRST on the job and the last to leave it is the way Leo Kampf, Chemist-in-charge of the New York City's Borough of Queens' Testing Laboratory, describes the work of his laboratory. The first part of the laboratory's job is to make soil borings whenever the designing engineer is in doubt concerning subsoil conditions. The next part of the job is to test materials at the source. This includes such materials as steel, cement, sewer pipe, piles, and the like. All of this is done before the job is started. During the course of construction the laboratory personnel make daily trips to Borough projects to inspect, sample, and test every material used in the construction. This includes everything from grass seed to sewer pipe up to 9 feet in diameter. Twenty-eight days after the last concrete is poured, the final tests are made either on cylinders or cores from structures.

Probably the most spectacular of the tests are those of sewer pipe. In the Borough's laboratory is what is believed to be the largest pipe-testing device in the world. This machine, built by the Baldwin Locomotive Works, is able to subject sections of pipe to pressures as high as 200,000 pounds so that cracking points may be ascertained. Its accuracy and sensitivity are so great that the press registered 5 pounds as it cracked a raw egg.

The laboratory is more or less self-sustaining. It received support from the Borough to the extent of $14,632 last year. The balance of its operating cost is met through a pro rata charge against the projects for which it conducts tests. One per cent of the contracts is the top limit of this charge. The laboratory also receives revenue from other city departments, especially from the Department of Public Works which calls on it for testing work covering projects underway.

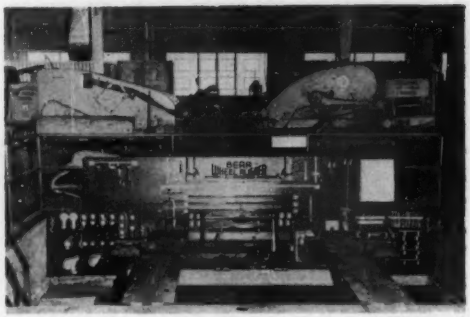
The laboratory operates with a staff of trained technicians under the jurisdiction of the Borough President.



OFFICIAL PHOTOGRAPH, PRESIDENT BOROUGH OF QUEENS

Shown operating the new 100-ton pipe-testing machine at the Queens Testing Laboratory are the late Maurice A. Fitzgerald, Borough President of Queens; William Raisch, Consulting Engineer, and Leo Kampf, Chemist-in-charge.

Any heavy-duty repairs needed are performed in this portion of the city's shop. Note the many overhead doors.



A wheel-alignment pit gets plenty of use. Most repair work, both major and minor, is done in the maintenance plant.

Los Angeles Maintenance Shop

Keeps City Equipment Fit

Dynamometer checks are made on all rolling stock before they leave the shop.

Los Angeles' new maintenance and repair plant occupies 61,502 square feet.

By BEN R. PARIS
Assistant General Superintendent
Bureau of Street Maintenance
Los Angeles, Calif.

SIGNS reading, "Los Angeles City Limits," erected by fun-loving G.I.'s, have been found in most of the remote corners of the earth, but to those charged with the responsibility of administering municipal functions in this sprawling metropolis, the large area of the city is no joke.

Within the corporate limits of the city, encompassing an area of 453.5 square miles, are some 5,800 miles of streets and highways, bridges, tunnels, and appurtenant structures that must be maintained in a safe and passable condition at all times to properly serve the heaviest concentration of vehicular traffic in the world. Extensive equipment is used in this work, and, in addition, the Bureau of Street Maintenance of the Department of Public Works operates a fleet of over 1,000 motorized and non-motorized units to provide the service that this city requires.

Maintenance Plant

This large fleet, in turn, needs extensive maintenance and repair. To meet this need, Los Angeles has recently constructed a modern maintenance and repair plant. The shop's building is necessarily large, occupying a ground area of 61,502 square feet, and has plenty of room around it. It is of saw-tooth-type roof construction, with rough wire-glass panels extending the full width of the building. Center panels are movable, floor-controlled for added

ventilation. For rapid maneuverability of equipment, the building is constructed with 24 roll-up-type metal doors, large enough to give easy access to the large units in the fleet. These are a product of the Pacific Rolling Door Company; 22 of them are chain-operated and are 15 feet high by 22 feet wide. The remaining two are the same width and 20 feet high. One is at each end of the building to serve the main craneway. Being a municipal structure, the plant was designed to be attractive, yet not ornate.

A 50-foot-wide craneway equipped with two floor-controlled Craneveyor Corporation bridge cranes traverses the 422-foot length of the building. One-ton jib cranes with air hoists are strategically located in the repair bays and shops so as to reduce hand loading of materials and parts to the minimum, and to facilitate disassembly and reassembly of heavy equipment. The swing of the jib cranes extends into the main craneway for rapid and easy transportation of heavy motors and other assemblies. These came to us from the Crane Hoist Engineering Corporation.

Shop Layout

The shop houses a well-equipped machine shop constructed with a split creosoted block flooring; electrical shop; welding and blacksmith shop; tire repair shop; carpenter shop; tool and parts room, as well as offices, shower, change rooms, and the like.

With the exception of certain specialty items, such as radiator repair and recoring, all types of repair work, both major and minor, are done in these shops on trucks, tractors, graders, rollers, loaders, motor sweepers, and shovels.

Lubrication and oil changes are handled by special lube crews operating from these shops during the off-hours and off-days of the field crews. They work with specially equipped trucks, each with its own portable air compressor and lighting plant, as well as diversified lubrication equipment and supplies.

Other outstanding features of the new plant include a two-bay-system cleaning building, equipped with overhead cranes separate from the main shop building; two grader-size paint-spray booths using Commercial Air Conditioning equipment to confine spray painting; under-floor exhaust duct and flexible exhaust hoses serving all repair bays to remove noxious fumes by suction fan; dynamometer equipment for checking power output of both incoming and outgoing equipment; fully equipped Bear wheel alignment pit, and Janitrol overhead unit heaters.

The shops are located adjacent to a large warehouse building which carries an extensive inventory of parts and materials used in equipment repair, in addition to tools, supplies, and all materials used in regular street-maintenance activities throughout the City of Los Angeles.

Both shops and warehouse are under the general supervision of H. R. Olney, Equipment Superintendent; J. L. McGory is General Automotive Foreman in charge of the shops; Louis E. Graham, Electrical Foreman, is assisted by Machinist Foreman J. H. Bonhill and Automotive Foreman Henry J. Lakevold.

National Conference on Industrial Dispersion Held by NSRB

AN EFFECTIVE industrial dispersion program can and will be developed within local marketing areas that will assure reasonable security at reasonable cost, with no disruption to production flow, now or later.

Such a program has these important aspects: (1) *it preserves the economic and industrial integrity of each metropolitan area;* (2) *it enables each of these areas to develop and expand;* (3) *it provides a high measure of added security in event of attack;* (4) *it will provide lasting economic and industrial benefits to the areas thus developed, whether or not an attack ever comes.*

This belief and this program were stressed by Jack Gorrie, Chairman of the National Security Resources Board, to some 50 industrialists, labor leaders, planners, and civic organization executives, who met in Washington, D. C., on November 13 in a National Conference on Industrial Dispersion.

Local Initiative

Mr. Gorrie stressed the importance of local initiative in carrying out this program. "Local and state bodies and associations in which labor and industry are well represented must do the initial planning themselves; must work out their own contemplated dispersion pattern," he said; "that's the free-enterprise, self-government way.

"Plants will be constructed within reasonable distance of materials, manpower, and markets, and at the same time meet the security factors that seem pertinent in this period of national emergency."

In a talk before the conference group, Defense Mobilization Director Charles E. Wilson also emphasized the local character of this program for greater national security. "Existing industrial areas can apply the dispersal idea—space—in terms of a few miles rather than hundreds," he said in announcing the program last August.

We are not asking vital industries to move their factories, but only to locate new factories a few miles away from existing ones.

In our expanding production we must take every possible step to protect our people, and our military experts tell us that one of the best ways to protect people and industries is to spread them out.

By spreading them out we make it that much harder for an enemy to hit them. The greater the number of likely targets, the greater the chances of each one to survive an attack. And the possible damage from each bomb is thereby limited rather than increased.

As a practical approach to carrying out this program, the organization of local industrial-dispersion committees was urged.

"All industrial cities have been invited to set up dispersion committees," said Ethan Allen Peyser, Director of NSRB's Office of Special Security Programs. "These committees can easily work out their own dispersion programs, including sites within their own local marketing areas which will fulfill any reasonable requirement. The recommendations of these committees should be, and we believe will be, one of the major and controlling factors in any incentives such as certificates of necessity to be granted by the Federal Government."

A report of this National Conference on Industrial Dispersion and a brochure, "Is Your Plant a Target?", are available on application to the National Resources Planning Board, Executive Office of the President, Washington 25, D. C.

Final Congressional Action On Federal Civil Defense Appropriation

TOTAL federal funds available for civil-defense appropriations during the fiscal year 1951-1952 will amount to $74,945,000. Final Congressional action slashed the original appropriation request of $535,000,000 requested by the Federal Civil Defense Administration to this amount.

This means that, except for stock-piling of medical supplies and equipment, states and municipalities can expect little federal assistance for other phases of civil-defense preparedness programs beyond education and training and distribution of information.

The FCDA has, however, completed organization of, and opened, nine regional offices, located in Boston, Atlanta, Cleveland, Dallas, Denver, Chicago, Richmond, Seattle, and San Francisco.

When Municipal Employees

THE municipal administrator who expects perfection of his employees, or of himself, will be doomed to disappointment every day of his working life. Nevertheless, the mistakes which are made by your employees will have a very definite bearing on the success of your department.

Mistakes made by a normally intelligent, adaptable employee, and which are caused by lack of information, skill, or training, indicate inadequate supervision, and do not call for a reprimand. The fault in such cases is the supervisor's. Where the mistake results from carelessness or negligence, however, the employee is clearly at fault. In such instances, the supervisor must correct the employee's attitude or continue to be plagued by careless, negligent, and mediocre performance. If the offense is ignored, the employee loses respect for his supervisor and continues to make more mistakes because he feels he can get away with it.

An Effective Technique

There is a method for correcting such mistakes which is effective in the majority of cases. This is a step-by-step technique for reprimanding. Such a technique is simple and easy to remember and apply.

The method should be exercised only by the employee's immediate supervisor. Only he has a firsthand opportunity to get all the facts, and to observe the mistake when it is made. He is the only one who can determine if the mistake was actually made through carelessness or negligence.

In using this method, the superintendent must realize that he is dealing with individuals whose sensitivity varies greatly. One person may be so sensitive that his ego is hurt easily; another may be so insensitive that it is difficult to make any kind of impression on him. When reprimanding, these differences must be considered if proper results are to be achieved.

Regardless of the type of individual being censured, a properly administered reprimand, using the following six-step technique, is usually effective.

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1. Cool off (but not too long).

A first impulse when an employee makes a serious blunder, is to become angry and "bawl him out." This tendency is aggravated if the superintendent is under a mental or physical strain caused by overwork, a succession of critical decisions, or other factors. The tendency may also be aggravated by a feeling of insecurity or inferiority on the part of the supervisor.

Though he may have many reasons for becoming angry, the superintendent should not under any circumstances permit himself the luxury of this entirely natural reaction. The employee who is "bawled out" becomes irritated, disgruntled, upset, and discouraged. He will later communicate his feeling to other employees, causing them to become upset. The entire working force can become adversely affected.

Though you should always be mentally calm when reprimanding, you should not "cool off" for too long a period. An offending employee who is not corrected within a reasonable length of time will (1) think up a lot of excuses, (2) begin to think his boss did not know a mistake had been made, or (3) make more mistakes. In general, the shorter the interval between the mistake and the reprimand, the better.

2. Talk to the offender in private.

No one likes to have his faults discussed in the presence of his fellow workers. If the mistake is corrected publicly, the offender's personal worth is lowered. He loses prestige with the group and may begin to feel insecure. Those who witness the reprimand may subject the offender to further criticism, lowering his morale still further.

If the reprimand is not deserved, on the other hand, by giving it in public you may cause other employees to take the reprimanded employee's side against you. The witnesses may also feel embarrassed by the lack of tact displayed, and may develop an insecure feeling about their own jobs. Whether just or unjust, nothing may be gained, and much may be lost by publicly reprimanding employees. You should therefore always talk *in privacy* with the employee whose mistake you are correcting.

3. Make certain that the reprimand is deserved.

Nothing will more quickly destroy an employee's confidence and respect for his superior than an undeserved reprimand. You should first determine,

Make Mistakes

By CHARLEY H. BROADED*

by talking to the employee in privacy, whether or not the mistake was made through actual carelessness or negligence. After obtaining all the facts relative to the case, you should then obtain an admittance of fault from the employee. He will not accept even a deserved reprimand unless he is convinced that he was at fault. At the same time, you should find out why and how the error was committed.

4. Show the seriousness of the mistake.

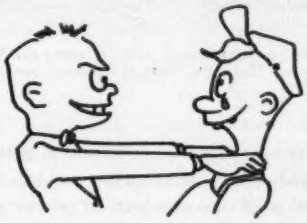
To make your reprimand convincing, you must yourself be fully aware of the importance, in terms of dollars and cents, of preventing costly mistakes. If you are not greatly concerned about damaged equipment, waste, or labor costs, neither will the employee be concerned about them. It may help in fostering the correct attitude toward costly mistakes, to keep a separate record of the cost in dollars and cents, of mistakes made by employees under your supervision.

If the mistake is serious enough to

warrant a reprimand, the employee should be shown the full effect of his carelessness, even though the immediate damage is apparent. The subordinate should be informed of the bad results in a straightforward manner, so that he will realize exactly how you feel about it. If an apparently small mistake has widespread consequences, these should be explained fully to the employee. Otherwise he will feel that the mistake was unimportant.

5. Encourage the offender to do better next time.

Any normal individual will feel dissatisfied with himself upon being deservedly reprimanded. This dissatisfaction is all to the good as long as it is



directed toward encouraging the employee to do a better job in the future. Again, the personal characteristics of the individual must be considered in determining the severity of the reprimand. The reprimand should not destroy the foundations of the employee's self-esteem, or he will become discouraged and his enthusiasm for the job may be killed.

Since your objective is to correct the mistake and make the man a better worker, you should encourage the offender by indicating your belief in his ability to prevent recurrences. An expression of confidence in his trustworthiness implants a resolution to improve his workmanship. An employee who knows his supervisor has confidence in him is unlikely to continue making thoughtless mistakes.

6. Demonstrate the right to your supervisory position by showing how to prevent a recurrence.

Proper execution of this step calls for exercise of your superior job knowledge acquired from previous experience and greater know-how. It may also call for exercise of some original thought to explain the technique which you understand, in terms of the employee's experience and ability. Unless this final step is carried through convincingly, your previous efforts may be wasted. By doing this you prove your worth to your subordinates and establish your right to the position you occupy.

Wherever possible, of course, the superintendent or department head prevents faulty work by means of thorough instruction and superior job knowledge. In this way, he prevents his subordinates from making many possible mistakes. When one of them does commit a mistake that requires a reprimand, however, he exercises his ability to correct the employee without causing irritation or resentment, using this six-step technique to straighten him out.

* Director of Industrial Relations, Fisher Flouring Mills Co., Seattle, Wash. Mr. Broaded is author of the book, "Essentials of Management for Supervisors," published by Harper & Brothers.

Credo of a Public Servant

THE government post I hold was established only to serve the public, I accept it as a trust.

I was designated to my office by honest means.

I hold my allegiance to the public service above loyalties to any individual, group or special interest. I perform my duties in the spirit of a builder of good government worthy of the respect and support of all citizens.

I take full responsibility for my conduct in government service, and for the official conduct of government employees who are under my jurisdiction and control.

I am prepared to challenge and expose misdeeds in government, no matter what the source or the consequence.

I affirm that ignorance of misconduct does not excuse or properly explain such misconduct, either for myself or for any of my associates.

I consider my sworn statement of office a contract to perform my duty according to the law. But public service requires a higher pledge, and to this Code of Conduct I hold myself strictly accountable.

Drafted and distributed by the American Veterans Committee. Copies suitable for framing and already framed plaques are both available from Credo Project, AVC, 110 West 42nd St., Room 503, New York, N. Y.

Lakeland, Fla., *Assaults Mosquitoes by Plane*

Officials inspect Lakeland's mosquito-battling equipment. Left to right are Drs. J. D. Griffin and F. G. Martin, City Health Department officials; Don Emerson, Mosquito Control Director, and Joseph Garcia, Assistant Control Director.

Insecticide spraying from the air combined with the work of ground crews eliminates troublesome mosquito nuisance. The same plane is used for rodent control and the control of plant growth on city's lakes

By DON EMERSON
Director of Mosquito Control
Lakeland, Fla.

IF MOSQUITOES could be killed by words, they would all have been strangled by paragraphs written about them by the people of Florida. Unfortunately, mosquitoes don't pay much attention to words, but they do respect the work of a well-coordinated mosquito-control program.

Two years ago, Lakeland's Health Department was deluged with complaints about these destroyers of sleep to the point where something had to be done. Since the public seemed ready to support an aggressive campaign, the head of the City Health Department authorized a representative to attend the annual meeting of the Florida Anti-Mosquito Association at Fort Myers. Out of the wealth of information derived from this meeting, the city formulated a program that proved to the mosquitoes we meant business.

We considered first the types of mosquitoes, their breeding habits, and radius of travel. Next we set up a program under the supervision of the State Board of Health, and sent all species of the mosquitoes we had collected to the Division of Entomology at Jacksonville for identification and count. We made a complete survey to ascertain all possible breeding places. We divided these breeding places into two groups: man-made and natural water receptacles.

Since we have a large number of natural breeding areas such as lake shores, swamps, and ponds, we decided to attack these from the air because it was cheaper. Using ground methods, we would need considerable manpower and time. One man can cover only three to five acres per day on foot at a cost of about $2.50 per acre covered. With properly equipped aircraft, this figure drops to about 25 cents per acre.

PHOTOS BY PERKINS BROS., LAKELAND, FLA.

Pilot of spray plane and Rodent Control Director William Saunders conferring before the take-off of the plane which will drop the poison bait.

The city purchased a light Aeronca plane with tank and spray boom installed which are a product of Aerial Insecticiding Portable Spray Company, of Orlando, Fla. It also bought a four-wheel-drive Jeep that was to be used in ground survey to carry personnel and equipment such as shovels, boots, and drums of oil. A fogging machine was installed on the Jeep simply by connecting a copper tube from a 5-gallon can to the exhaust pipe at the manifold, with a hand-operated valve in the line for turning the flow of fogging oil off or on. This apparatus met with instant success wherever it was used. When it is used at night in the residential areas, the fog drifts through shrubbery and grass, under houses and through trees, with deadly effect on any mosquitoes in its path.

Chemicals Used

Chemicals were purchased wholesale and at technical grade or full strength and reduced to the proper percent in No. 2 fuel oil. Two different types were compounded and used alternately, so immunization would not occur in the pests to be combatted.

City maps were installed on the walls

of a small office in the Health Department. These indicate and locate complaints with red pins, showing the density in certain areas. For example, if a heavy concentration of red pins occurs in one spot, a man-made condition is probably contributing to the breeding.

A crew proceeds to that neighborhood and in short order finds the trouble. Corrective action is noted on the maps by the use of green pins for ground fogging or oiling, and yellow pins for each source found.

If the red pins cover a general area of considerable size, then prevailing winds of the preceding days are checked and it is possible to determine the direction and location from which the mosquitoes are being blown in. At this point the plane is brought into action; in the early morning it sprays several miles of the up-wind area, which in most cases would be in a swamp or heavily watered location.

Spray Interval

At the height of the mosquito season, the lake shores are sprayed at 10-day intervals. As there are 37 miles of shoreline in and adjacent to the city, ground-spraying would be a formidable job. With the city's plane flying at 60 miles per hour, it becomes a matter of 37 minutes of actual spraying, not including time to load and ferry to the working area.

At this point, it might be well to state that almost every city has in its employ a licensed pilot from World War II who would be happy for a small extra remuneration to do the flying when conditions necessitate it. Aerial spraying is not as dangerous or spectacular as some pilots would have one believe, for, with the reliability of the light plane and the proficiency demanded of the commercial pilot by the Civil Aeronautics Administration, it becomes more commonplace every day.

Aerial spraying alone will not correct all mosquito problems, nor will ground fogging; but the two correlated in the work will give most effective results. Combining these with vigilant ground survey, drainage of small standing pools of water, the constant check for breeding places in discarded tires, tin cans, rowboats parked in backyards, fishponds without larvae-eating fish, and other receptacles, a rather comprehensive control program emerges that will benefit any city at a moderate cost.

We found the excellent help available from the State Board of Health and the United States Department of Entomology in technical assistance and advice invaluable in setting up the project. Aside from mosquito work, other uses have been found for the city's light plane. Under the direction of the Rodent Control Director, it is used to "seed" marshy or open field areas from which come rodents that destroy citrus fruit and enter buildings in search of food. This service alone saves many thousands of dollars annually in destroyed property and foodstuffs, and the health protection from these disease-carrying creatures is inestimable. The rat bait used is Warfarin Compound No. 42 sealed in cellophane in 1-ounce bags with some air left inside so they float in the water, allowing the rats to swim out to them.

Another use for the plane is the clearing of lakes of the hyacinth nuisance. All of the city's lakes are free from the floating masses of vegetation that harbor hordes of mosquitoes and annoy fishermen. Whenever these plants are spotted in amounts large enough to warrant the use of the plane, they are sprayed with 2-4-D weed killer. One application from the air is usually sufficient to do the work and within several weeks they disappear entirely. Before the city purchased the plane, it spent twice its cost on one lake alone to have the hyacinths sprayed.

The results obtained in the air and ground attack on these health menaces are confirmed not only by the records kept from day to day on the progress of the program but by the grateful letters from the people of the City of Lakeland.

A 7-Foot Street Broom in 12 Minutes

By **W. J. MULLINS**
Street Superintendent
Eugene, Ore.

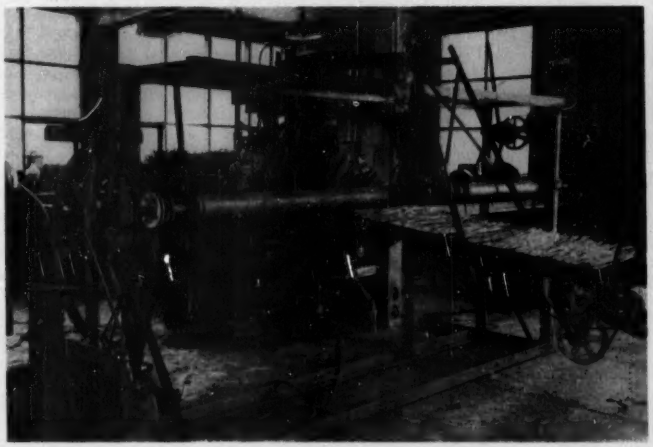
IF THERE is ever a contest to set the world's record for the fastest broom-rebuilding time, we'd like to enter the name of our city. In our maintenance shop we have built a machine that saves six to eight man-hours for every rebuilt broom. The machine will rebuild brooms from 2 to 10 feet long. We are able to rebuild in 12 minutes the 7-foot brooms, which take 8 to 10 hours to rebuild by hand.

The machine has a table that is suspended from a carriage that runs on a track parallel to the broom core. It follows the channel that delivers the broom straw to the broom core. It is kept in exact alignment with the cable that holds the broom straw. This cable unwinds off another drum that has a brake on it to provide tension enough to draw the straw into the channels.

The table has a power unit that drives two conveyor belts which carry the straw up to the cable. The belts are wide enough apart so that the cable can bend the straw in the middle and draw it down between the two belts and into the channel of the broom core which it is following.

The broom core is turned by another power unit which turns at the same rate of speed as the conveyor belts, so that the straw will feed in evenly. Both power units are operated by a foot switch which starts and stops them together.

The machine has been in operation since July 1951, and has been used to build 20 brooms. Four of these have been on a 4-foot core for a smaller sweeper, which takes 8 minutes of building time.



Candidate for the title of world's champion street-sweeper-broom rebuilder.

SAN ANTONIO FINALLY ADOPTS

A Council-Manager Charter

AMERICA'S "Fastest Growing Major City" became the fourth largest council-manager-governed municipality in the nation on October 2, 1951, when the voters of San Antonio (1950 population, 406,811) adopted, by a two-to-one majority, a home-rule charter that will place the council-manager plan in effect on January 1, 1952. Cincinnati, Kansas City, and Dallas are the three larger council-manager cities.

Since 1914, San Antonio had been under a home-rule charter that provided for the commission plan of government. A mayor and four commissioners served in dual roles as members of council and as the full-time heads of administrative departments. Although occasionally some men of ability were attracted to serve under the commission plan, they were the exception to the general rule of mediocrity. As a result, San Antonio's municipal government failed to keep pace with the rapid expansion of the city's population and boundaries.

Two Previous Efforts Unsuccessful

Strong popular dissatisfaction with the administration of municipal services under commission government had led to two previous attempts to gain adoption of the council-manager plan in San Antonio. In 1940 a council-manager charter failed of adoption by a negative vote of approximately 10,000 against 6,000 affirmative votes. Again, in 1950, a charter election was held, following the election, by a four-to-one majority in 1949, of a reform mayor pledged to the council-manager plan. Unfortunately, the council-manager forces were split in 1950, in support of two rival charters. Consequently, despite the fact that the combined total of the affirmative votes for the two charters exceeded the combined total of negative votes by more than 8,000, neither charter gained adoption.

Despite two previous defeats, the advocates of the council-manager plan in San Antonio were determined to carry on their fight for the adoption of a charter. Previously dissident council-manager factions combined in an election on May 9, 1951, to choose not only a mayor and four commissioners but also a 15-member charter commission, all pledged to the council-manager plan. The two-to-one majority accorded the council-manager candidates by the voters in that election served to forecast strongly the adoption of the council-manager charter on October 2, 1951.

The Charter Commission elected last May was the first such body in the history of the city. In the 1940 and 1950 campaigns, the charters had been submitted in the form of amendments drafted by citizen committees appointed in each case by the Mayor. The task of the Charter Commission, therefore, was somewhat simplified by reason of the work done in 1940 and 1950. Nevertheless, the Charter Commission worked diligently throughout an unusually hot summer to complete the charter by August 9, 1951—just three months after their election to office. The Bureau of Governmental Research served as a consulting agency and secretariat to the charter-drafting groups, both in 1950 and 1951, and the Director of the Bureau had served as a member of, and chief consultant to, the charter committee in 1940.

By EDWARD G. CONROY
Director, Bureau of Governmental Research, Inc.
San Antonio, Texas

Upon the recommendation of the Bureau of Governmental Research, the mayor and commissioners-elect initiated negotiations with the Public Administration Service of Chicago on May 10, 1951, to perform a number of contractual consulting services, beginning as soon as possible after June 1, 1951, in preparation for the administration of the manager plan. Two principal contracts were signed, on June 14, 1951, between the City of San Antonio and P.A.S.

Assessment Equalization Program

The first such contract provided for the retention of P.A.S. to supervise a complete real-property tax-assessment equalization program and to install a completely modernized tax-assessment system. It is estimated that approximately two years will be required to complete this program, which will involve an expenditure by the city of about $500,000. Inasmuch as real-property tax assessments in San Antonio have been known to be not only seriously non-uniform but also, on the whole, quite low, the tax-assessment program is considered to be of utmost importance to the future welfare of the city. It is anticipated that, through assessment equalization, more than $250,000,000 in tax values will be added to the city's tax rolls. Since 70% of all municipal revenues in San Antonio are derived from the ad valorem tax, the value of the program from that point of view alone is easily apparent. In addition, the capacity of the city to issue bonds for public improvements will be thereby enhanced.

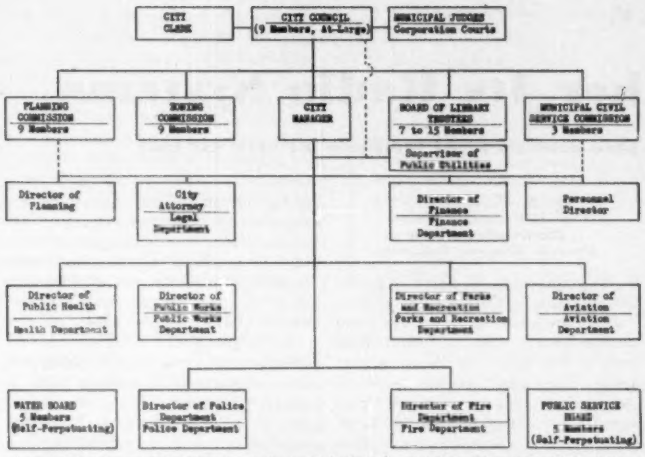
The second contract between P.A.S. and the city is termed a "General Consulting Services Contract." Under it P.A.S. has agreed to provide "consulting service to the city as needed and authorized."

Three initial projects under this second contract were authorized by the city. The first provides for establishing and installing a complete personnel-administration system for the city, including position classification, a proposed pay plan, proposed personnel rules and regulations, and a recommended plan for organization of a personnel agency. Inasmuch as San Antonio has never had the benefit of anything even remotely resembling a personnel-management system—other than the time-honored spoils system—the need for such a contract is evident.

Second Project Authorized

A project to conduct studies of the administrative-organization and financial-management practices of the city was the second project authorized by the city under the general consulting services contract. The administrative-organization part of this project is obviously closely related to the personnel studies and to the administrative organization requirements of the new charter. Financial management practices followed under the old charter, as well as those required by the new charter, are the objectives of studies and recommendations to be forthcoming from the second part of the project.

Under the third of these projects, Dean O. W. Wilson of the School of Criminology of the University of California came to San Antonio in July and, during a six-weeks period, conducted an organizational and administrative survey of the local Police Department. His survey was, in effect,


CITY CLERK
CITY COUNCIL (9 Members, At-Large)
MUNICIPAL JUDGES Corporation Courts
PLANNING COMMISSION 9 Members
ZONING COMMISSION 9 Members
CITY MANAGER
BOARD OF LIBRARY TRUSTEES 7 to 15 Members
MUNICIPAL CIVIL SERVICE COMMISSION 3 Members
Supervisor of Public Utilities
Director of Planning
City Attorney Legal Department
Director of Finance Finance Department
Personnel Director
Director of Public Health Health Department
Director of Public Works Public Works Department
Director of Parks and Recreation Parks and Recreation Department
Director of Aviation Aviation Department
WATER BOARD 5 Members (Self-Perpetuating)
Director of Police Department Police Department
Director of Fire Department Fire Department
PUBLIC SERVICE BOARD 5 Members (Self-Perpetuating)

Note: 3 Member Fire and Police Civil Service Commission (Statutory), and 5 Member Zoning Board of Adjustment (Statutory) not shown.
Charter Prohibits Establishment of Administrative Boards. Electric and Gas, and Water Boards will continue until revenue bonds are retired, respectively in 1972 and 1965.

Organization chart of San Antonio's municipal government under new charter.

a re-survey, inasmuch as he had made a comprehensive survey and report on the San Antonio Police Department for P.A.S. in 1939. Unfortunately, many of the improved practices installed in the Police Department by Dean Wilson in 1939 had been abandoned in the intervening years; in fact, the administration as well as the morale of the department had sunk to an all-time low immediately prior to June 1, 1951, when the newly elected mayor and commissioners took office.

Other survey projects are contemplated by the incumbent mayor and commissioners. These include surveys of public-works administration and the preparation and installation of a complete system of performance budgeting.

Provisions of New Charter

The new council-manager charter adopted by the voters of San Antonio provides for a nine-member council elected at large. The City Manager is made the chief executive and administrative officer of the city, with exclusive power of appointment and removal over all persons in the administrative service. In addition, the City Manager will exercise the same exclusive powers with respect to the Director of Personnel and the Director of Planning, despite the fact that the charter provides respectively for a three-member Municipal Civil Service Commission and a nine-member Planning Commission. Moreover, with the exception of these commissions and an independent Board of Library Trustees, the City Manager will appoint members of all advisory bodies and regulatory commissions.

Eight municipal departments are created by the charter. These include Legal, Finance, Police, Fire, Public Works, Public Health, Parks and Recreation, and Aviation. The council is authorized by the charter to combine any two departments and create other departments or agencies. All departments and agencies created by the charter or by the council "shall be under the direction and supervision of the City Manager," as stated in the charter. Boards, commissions, committees, and authorities, other than those created by the charter, may not be established to administer municipal functions. Existing independent administrative boards established under the terms of revenue-bond indentures for the water and for the gas and electric systems will continue in effect until the revenue bonds have been retired.

The charter grants to the City of San Antonio the fullest powers of municipal home rule. Specific powers include provisions for urban redevelopment, public welfare, and "the power to levy, assess and collect taxes upon all subjects of taxation which the State of Texas has the power to tax." It is anticipated that future city councils will experiment with new sources of municipal revenues under the authority granted by the new charter.

EDITOR'S NOTE: At San Antonio's municipal election on November 13, all the council candidates backed by the Citizens' Committee for Council-Manager Government were elected by majorities ranging from 2-to-1 to almost 4-1. The election turn-out was small, with only about 25,000 voting, and there was no organized opposition to the new council slate.

Our Too-Secret Weapon

COMMUNITY MOBILIZATION is one of the most powerful weapons for the defense of the free world. It is our secret weapon. It is so secret that most of us do not realize we have it. If as a nation we were to spend on it as much as we spend on one bomber that we hope we'll never have to use, we could so strengthen the very fibre of our communities, our country, and our allies, that the chances of our winning the peace would increase by a substantial percentage. But let's face it. It is easier to get 50 billion dollars for planes and tanks and atom bombs than it is to get 50 million dollars for houses and schools and hospitals.

That need not discourage us, however, from undertaking a really effective community-mobilization program. We can do it without additional appropriations, additional bureaus, and additional organization charts, simply by using better what we already have. We are using our physical resources to the fullest in most parts of the country: our plant capacity, our stocks of raw materials, our schools, our housing are pretty well strained. Our workers are employed as never before. But our human resources—our ingenuity, our ability to cooperate with each other to solve common problems, the willingness of our people to contribute to the common defense above and beyond their everyday work—these have not begun to be tapped. Community mobilization is the key with which we can unlock these human reserves.

Community Mobilization

What do we mean by community mobilization? Just this: the gathering together of the leadership in our communities to identify the problems their communities face, studying these problems until they come up with agreed-upon solutions, and then pooling the human resources of the town to solve those problems. By and large, people will only make the effort to get together and forego their normally separatist ways when they have a problem which they recognize to be of importance to their families, their neighborhood, their community, or their nation, in that order. Ideally the problem should be of importance to all four.

(Introductory paragraphs of a recent address by William L. Batt, Jr., Special Assistant to the Secretary of Labor. Copies of the complete paper (6 pages mimeographed) are available on application to the author at the Labor Department Building, Washington, D. C.)

ONONDAGA COUNTY, N. Y.

Ties Together Its Radio Systems

Communications plan uses all local facilities for civil defense

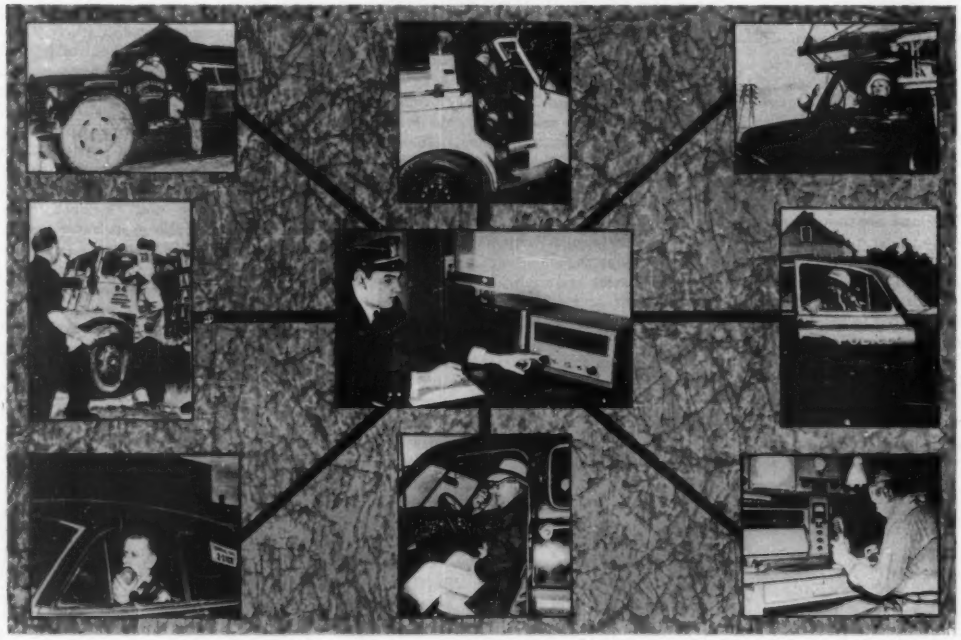
By N. F. HARMON
Civil Defense Coordinator
Electronics Division
General Electric Company

AT PRESENT, there are 20,000 fixed-base stations and 190,000 mobile units in the United States equipped for civilian two-way radio-telephone communication. How do we use the radio facilities at hand to insure our having the best possible communication system for disaster use?

Surveys of these systems should be made locally, including information on the number and location of land stations, frequencies used, etc. The Civil Defense Authority of Onondaga County, N. Y., found radio facilities in operation as shown by the table opposite.

There are other agencies using radio communication, some of which have been added since the inventory was made. Subsequent surveys made in other communities revealed that Onondaga County is typical from the standpoint of radio communication. Most cities and counties have police and fire departments with radio-equipped vehicles. There are radio-equipped taxicabs in nearly all cities. The conditions in Syracuse are the conditions in St. Louis; Fort Wayne, Ind.; San Bernardino, Calif.; Seattle, Wash., etc.

The problem was to tie together all these agencies into a unified command and communication network with a common frequency. It was decided to use a new coordinating frequency rather than one of the existing services



THE Onondaga County (N. Y.) civil-defense communications system enables county CD authorities at a communications headquarters to coordinate activities of municipal and private agencies already operating two-way radio systems, as well as amateur radio operators, through installation of General Electric "Civil Defender" receivers in the dispatching offices of each of the participating agencies.

Illustrated are most of the services coordinated in the system—police and fire departments, county highway department, construction company, power company, taxicab companies, amateur radio operators, and subscribers to the telephone company's mobile public radio-telephone system.

A mobile trailer housing emergency transmitters can take over for services whose transmitting facilities are disabled during an emergency, as well as transmit coordinating messages to all the agencies. The center also will be connected to the public telephone system, which will be used as long as possible during an emergency.

In addition, the "Civil Defenders" can be installed at industrial plants, schools, hospitals, and other points vitally interested in receiving advance warning of an air attack. Upon hearing an alert from the "Civil Defender," silent except for such alerts, officials could set in motion predetermined plans for the safe handling of thousands of employees, students, etc., before more general public warnings are given.

since the police and fire channels (the most logical ones) are pretty well loaded at the present, as are the other channels.

The CD system developed for Onondaga County consists of a fixed-base station, transmitter only, at the control center, with inexpensive receivers at the dispatching points of the services listed. It is a one-way circuit by which directions and information will be given to the dispatching points for transmittal to the proper mobile units and then to the teams and crews throughout the area.

Agency with Radio	*Number of Frequencies*	*Mobile Units*	*Emergency Power*
Syracuse Police Department	2	180	yes
County Police Department	City Police Service	50	yes
Solvay Police Department	1	...	...
Syracuse Fire Department	2	20	yes
County Highway Department	1	50	...
Niagara-Mohawk Power Corp.	..	45	...
Kravec Construction Company	1	3	no
Star Taxi Company	2	69	no
Day and Night Taxi	1	15	no
City Cab Company	1	20	no
Central Taxi	1	11	no
New York Telephone Company	2	50 subscribers	yes
Santaro Construction Company	1	2	no

Agency Participation

Under the Onondaga plan, the individual agencies will continue to do their dispatching so long as they are able to do so. Each agency has been encouraged to provide an emergency power supply of sufficient size to operate the base station and furnish a few lights. There has also been a suggestion made to designate one of the mobile units as a secondary base station and on the yellow alert to move this mobile unit away from the target area. In the event the present base station is incapacitated, this mobile unit could be made the dispatching unit.

Duplicate base transmitters and receivers have been installed at the communications center. These operate on the same frequency as the regular transmitters and receivers of the different agencies and are under the control of these agencies. Thus each of the agencies has a spare base station. For these services having two frequencies, there are two base stations. Under this system, dispatching in depth has four steps or phases: (1) Regular equipment with regular power, (2) regular equipment operating from emergency power, (3) mobile unit acting as secondary base station, and (4) base transmitter and receiver at communication center.

Operation

The local Civil Defense Authority has asked that each agency designate qualified operators for service at the communications center. This would insure that there is someone familiar with the operations of each agency at the communications center during a disaster. Each of the services can be monitored at the communications center without interfering with the normal operation and a check can be made to determine if the service is functioning normally. Therefore, these needs can be filled:

1. Information can be gathered by simply listening to the reports coming in from the crews in the disaster area on the regular frequencies.
2. Instructions and directions can be given by way of the coordinating network.
3. Reports on the action taken can be had by listening to the messages given to the mobile units and to their replies.
4. Assurance can be given to the public by furnishing information to the local broadcasting stations by way of the coordinating network and by use of loudspeakers mounted on the cars and trucks of the communication network.

Mutual aid and mobile support can be requested and coordinated by means of the hams and the taxicabs. All cabs in the *country* operate on one of four frequencies, all of which are represented in the Onondaga Plan.

The Communications Center

The ideal is to have a fixed communication center at or near the CD headquarters, with a mobile center supporting the fixed center. If there is to be only one communications center, the mobile center in a large trailer, normally located in a remote spot, guarded to prevent sabotage, and moved to a pre-determined operating location, is the best solution. The centers should be equipped with a gasoline-driven electric power supply. The technical problem of operating a large number of transmitters from a small area such as a trailer has been satisfactorily solved.

Training of the operations crews is now in progress in Onondaga County. The control of the communications system of the area will be given to the Civil Defense Authority, with the operational control remaining with the agencies concerned so long as they are able to continue with their dispatching. Through this means over-all coordination is obtained in the simplest manner with a minimum of additional equipment.

THE important role of communication in Civil Defense arises from the need to:

1. **Gather (accumulate) information. This information must be correlated and evaluated at one or more points by authorities.**
2. **Instruct proper people on the basis of information gathered.**
3. **Direct forces at disposal, issue commands, and determine that proper action is being taken.**
4. **Report action that has been taken.**
5. **Inform and assure the public.**

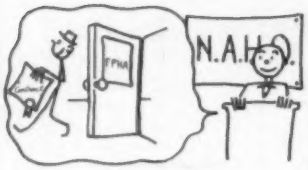
Interstate Compact Creates New Port Authority

RATIFICATION this year by the legislature of Pennsylvania and New Jersey of an interstate compact creating a Delaware River Port Authority to improve the Philadelphia port area points up the growing awareness of the need for public agencies to tackle problems of interstate metropolitan areas.

According to the American Society of Planning Officials, there are more than 20 metropolitan districts in the U. S. that straddle state lines. With creation of the Philadelphia Port Authority, five states now have established agencies to carry out joint administration of governmental activities in these so-called interstate metropolitan areas.

The newly formed Delaware River Port Authority was specifically set up to improve the river and develop the business of the port of Philadelphia-Camden as well as to provide transportation and river-crossing facilities in the port district—including a high-speed transit system in South Jersey. The port district is defined as Delaware and Philadelphia Counties on the Pennsylvania side of the river, and eight counties in New Jersey, starting at a line a little south of Trenton and running generally eastward to the Atlantic Ocean.

Highlights of Three Conferences



National Association of Housing Officials

THE new problems and prospects confronting public housing now that the once-crusading movement has reached comparative maturity and "respectability" dominated discussion at the 18th annual meeting of the National Association of Housing Officials held in Washington, D. C., Oct. 9-12, and attended by more than 1,200 representatives of local housing authorities.

Public-housing projects under provisions of the Housing Act of 1949 have moved from the design to the construction stage in cities throughout the country recently, and conference meetings reflected this trend. More than 53 manufacturers had exhibits at the conference.

Discussion Topics

Special attention was given to new local housing and redevelopment authorities and those with small programs. As usual, the active technical and maintenance section conducted well-organized sessions. Primary among the other discussion topics were reports on redevelopment in action and how city planning and public housing must be integrated with urban-redevelopment programs; relocation; federal-local relations; housing research; public relations and visual-audio housing aids; personnel; and housing-project design.

Considerable interest in cooperative-housing possibilities developed at a session entitled "Private Investors Relate Their Redevelopment Experience." Speakers included James W. Rouse of Baltimore, a mortgage banker; Aloys P. Kaufman of St. Louis, Executive Vice-President of the St. Louis Urban Redevelopment Corporation; Robert W. Dowling, President of the City Investing Company, New York City, and Chairman Raymond P. Harold, Chairman of Worcester (Mass.) Housing Authority. Mr. Dowling proposed and urged that insurance companies use their funds to finance cooperative projects which would be tenant-owned, as a means of encouraging civic responsibility and also to avoid the many headaches resulting in the management of wholly owned projects.

John D. Lange, new NAHO executive director, will devote much of his time to activities in the Washington office of the Association. Main headquarters, however, will continue at 1313 East 60th Street, Chicago. Mr. Lange has had several public and private housing positions since 1940. His most recent one was as director of management of the American Community Builders, Inc.—the firm headed by Philip Klutznick which has built the new town of Park Forest south of Chicago. That NAHO achieved a sound footing under the direction of former executive director John M. Ducey, who resigned in June, is evident from current membership figures: 2,591 individuals, 406 agencies, and 77 Redevelopment Information Service Subscribers.

At the annual business meeting of the organization, Frank S. Horne, Adviser on Racial Relations in the Housing and Home Finance Agency, urged that attention be given at future meetings to problems of tenant relations and discrimination. As the result of a membership petition, the NAHO board of governors moved to oppose the holding of future meetings in places where all NAHO members cannot participate fully because of race.

Clarence G. Klein, administrator of the Pittsburgh Housing Authority, was elected new NAHO president for the coming year to succeed L. Walter Henslee of Galveston.

League of Texas Municipalities

A REGISTRATION of more than 600 was recorded for the stimulating and well-organized 39th Annual Convention of the League of Texas Municipalities, held at Mineral Wells, October 21-24. Eight affiliated organizations, for which the League staff serves as secretariat, also participated: the Texas City Managers' Association, the Municipal Utilities League Section, the Texas City Attorneys' Association, the Municipal Finance Officers' Association, the Texas Association of Assessing Officers, the Texas Public Works Association, Personnel and Civil Service Officials, and the City Planners' Association.

The growing urbanization of the state, with its attendant problems and opportunities, was a dominant theme of discussion. In 1940, 45% of the population lived in urban areas; in 1950, 63% were urban dwellers, living in 735 incorporated municipalities (roughly 5,000,000 of the state's 7,500,000 population).

Importance of Explaining Local Affairs

Determination to make municipal needs more widely known, and to press for favorable action by the state legislature on local problems, was evident in the keynote addresses and in several of the well-drafted resolutions.

The importance of taking the time and trouble to explain local affairs and problems to the citizen and to the legislator was stressed.

Speakers

Speakers at the general meetings included Governor Allen Shivers and Attorney General Price Daniel. John D. Moseley, executive director of the Texas Legislative Council, asked for cooperation and support in a study of local-government finance and revenue sources being carried on by the Council. Charles B. Bennett, Director of Planning, City of Los Angeles, outlined specific methods by which Texas city and town officials could help to guide and control the vast industrial growth and mushrooming of Texas urban areas.

Austin's Mayor pro tem, Stuart McCorkle, who is on a leave of absence from the Institute of Public Affairs to direct the work of the Texas Economy Commission, cited the lack of local leadership as an even greater fundamental problem for Texas cities than that of financing. Other general meetings were devoted to social security and retirement problems; ways and means of reducing construction costs; recreation; water conservation; financing water and sewerage services; traffic and parking, and civil defense.

Numerous other specific problems received intensive discussion at separate sessions of the eight affiliated organizations, such as those on material and supply controls, public relations, bond financing and credit problems, new

legislation and court decisions of municipal interest, city-county coordination, zoning, and sanitation problems. Of special interest were papers given at the meeting of assessing officers, including reports on revaluation progress in Midland, and on assessment and collection of motor vehicle ad valorem taxes in Dallas, and a paper on current responsibilities of assessor-collectors by William E. Davis, Jr., executive secretary of the Tax Research Association of Houston.

Important Resolutions Adopted

Major resolutions adopted included a statement of policy asking the Texas Legislature to cooperate with cities by passing laws which would help cities attain more rights of local self-government, and to oppose restrictive laws. It also asked the Legislature to help cities by giving them wider sources of income, and to share with the cities the gasoline and natural-gas taxes. Another resolution asked creation of a state communications commission to regulate long-distance rates within the state and to provide cities with professional advice in local phone-rate cases. Also adopted was a resolution urging the League to employ professional assistance to aid cities in telephone-rate cases pending creation of a state group. Other resolutions endorsed civil-defense and disaster-relief planning efforts; urged study of local recreation programs and potentialities by the State Youth Development Council, and requested the National Production Authority to reclassify municipal public utilities as industrial facilities rather than commercial facilities.

Mayor Armistead Rust of San Angelo was elected president of the League, and Mayor Jim Wright of Weatherford, vice-president. New trustees are Mayors F. O. Brown, Schulenburg; E. H. Klein, Amarillo; Carroll L. Shiffer, Texarkana; C. W. McCollom, Odessa; R. I. Newsome, McKinney; J. L. Bullard, Kerrville; Otho Plummer, Beaumont; and Mayor pro tem Stuart McCorkle, Austin.

The League's membership in 1951 numbers 538 cities. E. E. McAdams and C. C. Crutchfield continue to serve as executive director and field consultant, respectively, at the League's new building, located at 108 E. 19th Street, Austin 1.

Mayor George D. Barber of Mineral Wells, a League past president, was host for the conference, which included an inspection and dinner at the plant of the Texas Vitrified Pipe Company. Dallas was chosen as next year's conference city.

Arkansas Municipal League

THE importance of adequate municipal information programs, home rule, and problems of local government finance were the keynote issues discussed at the 17th annual meeting of the Arkansas Municipal League, held in Little Rock, October 16-17, and attended by 200 local officials.

Mayor S. Harney Chaney of Batesville, retiring president of the League, and Glenn G. Zimmerman, executive director, both stressed the above points. Mr. Zimmerman said Arkansas municipal officials must make up their minds so that an action program can be mapped on these issues. The state must either grant cities and towns home rule, with necessary power to finance

themselves, or it must increase its turnback of funds to municipalities, he said.

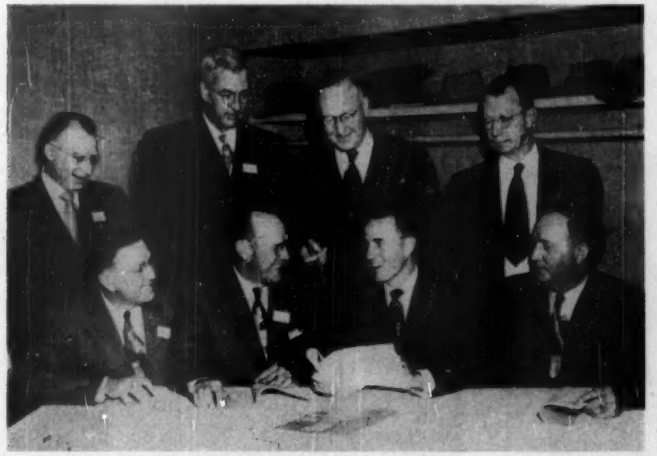
Many localities desire expanded industrial growth, in keeping with the state's over-all potentialities, Mr. Zimmerman added; but to attract industrialists, and as a major factor in plant location, they must provide more and better public services, such as streets, sewers and water systems. He pointed out that the Arkansas Economic Council, headed by C. Hamilton Moses, president of the Arkansas Power and Light Company, has been an important element in promoting "Build Your Home Town" programs. These programs, however, are handicapped because of the severe limitations imposed by the state's Constitution of 1874, which restricts taxation on real and personal property to 5 mills on the dollar of assessed value. Backward state enabling legislation has also been a handicap toward adoption of the council-manager plan in Arkansas, Mr. Zimmerman said.

Bulletin Distributed

A comprehensive bulletin on "Financing of Arkansas Municipalities," prepared by the League staff, was distributed at the meeting. As with other states, the bulletin shows that the population is rapidly becoming urbanized. In 1874, the state's population was 400,000, yet only 30,000 lived in cities. In the 1950 census, however, Arkansas municipalities claimed nearly 800,000 of the state's 1,900,000 population.

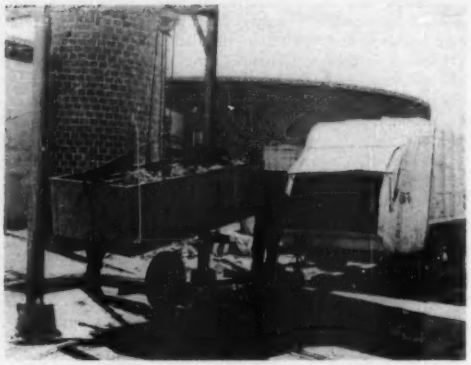
At other sessions of the conference there were discussions of the new Arkansas state-wide plumbing code and round-tables on health and sanitation, streets and traffic, and finances.

Among the resolutions adopted was one calling for the appointment of a 10-member League committee to study and recommend complete revision of the tax-assessment system and financing of municipal governments. The League's new headquarters are located at 416 Maple Street, North Little Rock.



New officers of the Arkansas Municipal League. Seated, left to right, are Commissioner R. W. Ferguson, Fort Smith, secretary; and Mayors C. J. Thomas, Clarendon, vice-president; Harold N. Falls, Wynne, president, and Ike Willcockson, Paragould, vice-president. Standing, left to right, are Mayor Harney Chaney, Batesville, representative to the American Municipal Association, and City Attorney Henry Whitley, Magnolia; City Attorney Ulys A. Lovell, Springdale, and City Clerk H. C. Graham, Little Rock—all vice-presidents.

With this truck-trailer combination garbage and rubbish are collected separately.



An electrically operated hoist lifts the garbage box off the bed of the trailer.

The Garbage Goes in the Trailer

Midland, Mich., requires that garbage be separated from other refuse and collects both in a single trip by a truck-trailer combination

By C. A. JOHNSON
City Engineer and Director of Public Works
Midland, Mich.

UNDOUBTEDLY, virtually everyone agrees that in the well-operated refuse-collection service, the householder separates the decayable garbage from the rest of the refuse. In Midland, we've been following this policy for many years. Like most cities, we've sent one truck around to collect the garbage and another to collect the rest of the rubbish.

The garbage assumes added importance in our municipal scheme because we grind it and place it in our digestion tanks. It is too bad that more cities don't follow this practice. The increased gas production enables us to supply power for all of the pumping and heating requirements for the buildings. Conservatively, we save at least $100 per month by this operation.

Our sewage plant is designed to handle hydraulically 4,000,000 gallons per day, and to serve a population of 20,000, without the addition of garbage. We are now collecting garbage from 15,000 people and are putting it through the treatment plant. So far, we have found the plant to have ample capacity.

Our gas engine is a 20-hp Climax unit. In addition, we have 5-hp and 15-hp electric standby motors. These are not used except during heavy flows caused by rains. The grinder is a Jeffries Hammermill with a capacity of 2 tons per hour. Garbage and rubbish collections are made twice a day in downtown areas, and once a week in residential areas.

This double collection means twice as many truck miles as a single collection, and the money we lose on it far over-

The hoisting hooks can be moved to the corner of the box, thereby facilitating the dumping of the garbage from the box into the hopper of the grinder.

The remainder of the non-decaying rubbish is taken in a Sanivan packer-type truck to the city dumping area where low ground is being reclaimed by fill.

shadows the money earned by grinding. The question then presented itself, which should we drop, the grinding or the separate collection? As it developed, we dropped neither. Our present practice allows us to benefit by both.

The way we made the saving was to haul a 2-wheeled trailer behind our refuse-collection truck. Thus, one trip around with the truck and trailer collects all. We estimate that this arrangement saves us about $5,000 per year in hauling costs.

The trailer has a capacity of roughly 6 cubic yards, or about half that of our Sanivan packer-type truck. This is a good ratio. Normally, you will get three or four times as much refuse as garbage, but by the time you put it through the Sanivan packer mechanism you reduce the volume so that both bodies fill up almost simultaneously.

The box on the trailer can be lifted from the trailer bed. We have built a trolleyway and have mounted a 3-ton Budget hoist on it to lift the body off the trailer and transfer it to the grinder hopper. The hoist is electrically operated. The Sanivan then takes the nondecayable rubbish to the dump for disposal as fill. Here, our only obligation is to maintain the dumping area so that it does not become a fly- or mosquito-breeder because of the standing water. We do this as a matter of course.

The trailer combination has met our needs excellently, has enabled us to continue our garbage-grinding program, to maintain separate collections, and to reduce truck mileage substantially.

Idaho Sets Standards For Water Fluoridation

By H. C. CLARE
Public Health Engineer
and
W. O. YOUNG, D. M. D.
Dental Consultant
Idaho Department of Public Health

THE Idaho Department of Public Health recommends and encourages the addition of fluorides to fluoride-deficient public water supplies for the control of dental caries where such a program meets and maintains the standards set by the Department. In our opinion, the overwhelming weight of evidence confirms that a domestic water supply, containing a proper concentration of fluoride, inhibits dental decay, and that such a concentration of fluoride has produced no untoward results. Recent experiences in many cities have demonstrated conclusively that fluorides can be added to public water supplies economically, safely, and accurately.

Procedure

In order that fluoridation may be instituted satisfactorily with all safeguards being taken for the city, water utility, water-works operators, and the public, the following procedure should be used:

Preliminary application should be made to the State Department of Public Health for permission to proceed with engineering plans for installation of fluoridation equipment. These requirements should be met before preliminary application is made:

1. Before the Department can approve fluoride treatment of a water supply, it must be in satisfactory compliance with the State Drinking Water Standards. If the water supply does not comply with them, the plans for fluoridation should include such provisions as are necessary to meet the Standards.
2. It is recommended that a rapid DMF * examination of teeth be made of all continuous-residence school-age children in a community contemplating a program of controlled fluoridation. The examination should be planned in consultation with the Dental Health Section of the Department of Public Health in order to insure uniformity of results throughout the state.
3. Written approval of the local health officer for fluoridation of the public water supply should be obtained. It is recommended that such approval by the local medical and dental societies be submitted, also.
4. Evidence of popular demand is desirable. This may take the form of resolutions by service clubs, parent-teacher associations, straw votes, or other methods of indicating positive popular demand. This is recommended but not required.

After preliminary approval has been granted, official action should be taken by the governing body of the municipality, authorizing the supplementation of the fluoride content of the city or public water supply. This can be done by resolution or ordinance.

Technical details which should be worked out in plan before any construction or installation is begun should be submitted to the State Department of Public Health for approval. These details should include plans and specifications for the feeding device, the point of application, water-metering device, materials and apparatus for testing the water for fluoride content, housing for the feeding apparatus, protective devices for operators, and specifications for the fluoride compound to be used.

The Idaho Department of Public Health recognizes fluoridation of fluoride-deficient public water supplies as a public-health measure effective in preventing, to a large extent, dental caries or tooth decay. Fluoridation is not considered in any sense as medication, since fluoridation has no therapeutic effect on the disease once it is acquired.

Beneficial results and accomplishments in preventing tooth decay by controlling the fluoride content of public water supplies is evident in many localities. The demonstration of these benefits in the City of Lewiston, Idaho, has been spectacular. Hughes and Berkeley † report that their program of controlled fluoridation, begun in Lewiston in June 1947, accomplished the following: after 2½ years, the seven-year-old children showed a reduction of 58% in caries incidence; for those eight years old, 35%, and for those nine years old, 25%.

The Department's approval has been given and equipment has been ordered for the controlled fluoridation of public water supplies in the following Idaho municipalities: Preston, Sandpoint, Coeur d'Alene, and Bonners Ferry. This public-health measure is under study and consideration in several other Idaho cities.

* Decayed, missing, filled.

† Hughes, William P., and Berkeley, Winston H., "Adding Fluorides to Lewiston City Water Improves Teeth of Children," *Western City*, Vol. 26, No. 8, August 1950.

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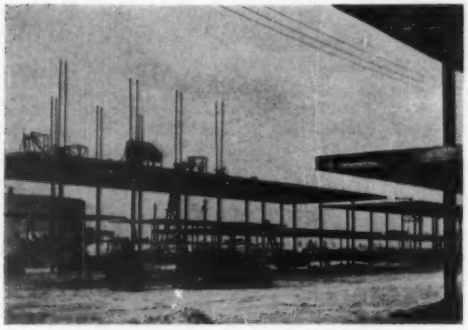
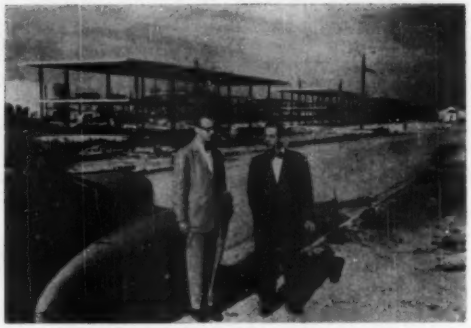
The *Lift-Slab* Building Method



Slabs are welded in place to columns with the aid of "poured in" steel collars. The roof is raised on the unit at which the welder is at work. The second floor will be raised with the aid of hydraulic jacks. A control console, shown on the slab, lifts the slab uniformly.



Ready for enclosure is this group of slab structures, part of a 200-unit public-housing project replacing a major Negro slum area. In the foreground are Robert W. Burr, Assistant Planning Engineer for Corpus Christi, Texas, and C. W. Vetters, City Secretary.

for housing projects and public buildings

A REVOLUTIONARY new construction concept, known as the Youtz-Slick Lift Slab Building Method, is attracting increasing attention from local public-housing authorities and other builders of public projects. Reportedly, more than 20 building projects, using the method, are already under way, and include a 200-unit public-housing project, a Chamber of Commerce building, and a large supermarket in Corpus Christi, Texas; a huge warehouse in Kansas City, Mo., and a class, administration-, and dormitory-building program for Trinity University in San Antonio, Texas.

Patented and sponsored by the Institute of Inventive Research of San Antonio, the lift-slab-building method is important because it makes possible large construction savings; reductions of maintenance and insurance costs, and a freedom and simplicity in building design.

Much current interest is focusing on the Corpus Christi public-housing project, known as D. N. Leathers Center II, which is replacing one of the city's worst Negro slum areas. Ten of the 41 buildings were completed on November 1, and five will be occupied shortly after the first of 1952, with the entire project due for completion by February 15.

In general terms, the lift-slab method used in Corpus Christi works as follows:

The concrete foundation of the building is formed and poured, with round steel columns set in place which will support the second floor and roof.

Then the second floor, including steel reinforcing rods, is poured, complete with "collars" that fit around the columns and which are used in the lifting process. A paraffin-base curing compound is applied to the surface of the second-floor slab and dusted with foundry-type talcum powder. Then the roof slab is poured.

When the two floors have hardened, hydraulic jacks, attached to each of the columns and operated through a central control panel to keep the "raising" process even, lift the roof, then the second floor into position.

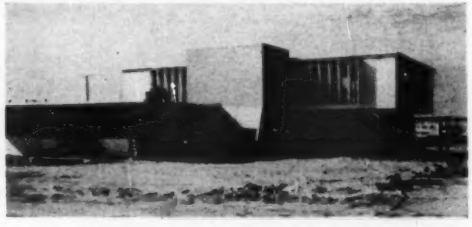
When the roof and second floor slabs are in proper position, the steel collars that have been "poured" into the 6-inch-thick roof and 7½-inch-thick second-floor slab are welded to the steel supporting columns.

With the shell up, interior and brick work can then begin under roof cover.

The obvious savings occur, of course, by pouring the concrete on the ground

The new Chamber of Commerce building in Corpus Christi was built by the cost-cutting lift-slab method. Note drive-in information booth, right, for motorists' use.

Another group of buildings nears completion. Note the overhang which helps insure shade for the tenants. Brick walls separate each of the dwelling units.



directly into the forms from the batch-mix trucks, and from the speed which the process makes possible. There are also other considerable labor and materials savings.

For example, the building of overhead wooden formworks can be eliminated; steel sash can be hung before masonry is set on clips stud-bolted directly to slabs above; plumbing can be precisely aligned by the casting of sleeve-holes through both floors at once; plumbing assemblies can be largely prefabricated and set, along with heavy bathtubs on the slab at grade, to be automatically lifted while work continues on connections; electrical conduits can be set in slabs before casting; both exterior walls and interior separating walls are non-load-bearing; because the ceilings of the flat slabs are smooth, finishing of them is simplified.

In the well-planned Corpus Christi project designed by Architect Richard S. Colley, each unit will have access to the street, and each building, protected by an overhang, will have shade and through ventilation, and face the prevailing breeze. The project, on a 17.45-acre site, with 14 families per net acre, required some $350,000 of site utility construction, including electrical work, gas- and water-distribution systems, a sewerage system, storm sewers, etc. Costs were $1,224 per room and $6,293 per unit without equipment. Excluding the site work, the costs worked out to $6.35 per square foot, or only $5,700 per dwelling unit. There are 90 two-bedroom units with 784 square feet; 92 three-bedroom units with 1,138 square feet, and 18 four-bedroom units with 1,221 square feet.

The Institute of Inventive Research, affiliated with the Southwest Research Institute, has licensed several contractors in the United States and Canada to lift slabs using the Youtz-Slick method. Further information can be obtained from the Institute at P. O. Box 2296, San Antonio 6, Texas.

How to Make Salvage Work Effective

$100,000 per year earned in salvage operation

SALVAGE of materials from refuse collection and disposal operations will become more profitable if the crews are allowed to share the earnings. This was one of the principal findings of J. G. Phelps, Superintendent, Wastes Division, Miami, Fla., expressed at the recent Congress of the American Public Works Association held in Detroit. This work also will be expedited, he explained, if local scavenging companies are allowed to work with the cities, provided, of course, that they agree to work at a reasonable figure.

What the City Salvages

Miami salvages rags, mixed metals, tin cans, waste paper, cartons, and boxes. The rags are salvaged on the truck in a special container. Credit for the rags is given to the particular truck that turns them in at the rate of 2 cents a pound. The city, in turn, advertises for bids on mixed rags and has been getting from 4 cents to 5¾ cents per pound. The city collects from 20,000 to 30,000 pounds of rags per week. Mr. Phelps warned that the weighmaster must be alert for flat irons, window weights, or other objects being concealed among the rags brought in for weighing.

Asks Bids for Mixed Metals

The city also advertises annually for bids on mixed metal, such as aluminum, brass, and copper. The laborers at the incinerator make this separation and are paid 2 cents per pound for the metals. The city, in turn, receives 9¾ cents per pound from the successful bidder, who removes the metal once a week.

Tin also is salvaged at the incinerator in special bins built and attached to the outer walls of each unit. The laborers pick out such objects as worn-out garbage cans, buckets, tin pans, bed rails, bed springs. Laborers get nothing for this operation, and the price is so unstable that no one cares to contract for it. However, a salvage firm takes it away and pays the current price, bringing the city a daily income of $25 to $30.

Large 5- and 10-gallon tin cans also have salvage value. Most of these are salvaged by laborers at the incinerator. The workers are allowed 1 cent per can; the city in turn gets from 3 cents to 15 cents per can, selling to nurseries and flower growers. The city salvages from 2,000 to 4,000 cans weekly and enjoys a demand always greater than the supply.

Burned tin cans also are salvaged in a special operation conducted by a salvage company. This company pays the city $3.50 per ton for the burned tin cans and salvages them by passing the incinerator residue through a feed hopper over a magnetic wheel. The metal is carried by the wheel to a second chute that leads to the trucks used to convey the tin cans to the loading depots. All ashes pass underneath the magnetic wheel and are deposited in a chute which leads to other trucks that convey the residue to the dumping area. The city gets a guaranteed minimum revenue of $25,000 per year. The actual income is closer to $50,000 per year.

Waste Paper

Waste paper is sold to the highest bidder, who is granted the exclusive right to salvage paper at the incinerator. This eliminates the need to purchase a baler or to allot space for the work, and it avoids the necessity of increasing the work crew. This year the city received a bid of $17,000 for the privilege of salvaging paper. A private concern also receives by bid award the right to salvage crates, boxes, and hampers.

Total earnings from salvage work, Mr. Phelps estimates, runs approximately $100,000 per year.

Bettman Foundation to Study Planning Education

WITH the financial aid of the Alfred Bettman Foundation (formed shortly after Mr. Bettman's death), and with Professor Frederick J. Adams, of M.I.T., as director, a comprehensive survey of planning education in the United States is about to be undertaken.

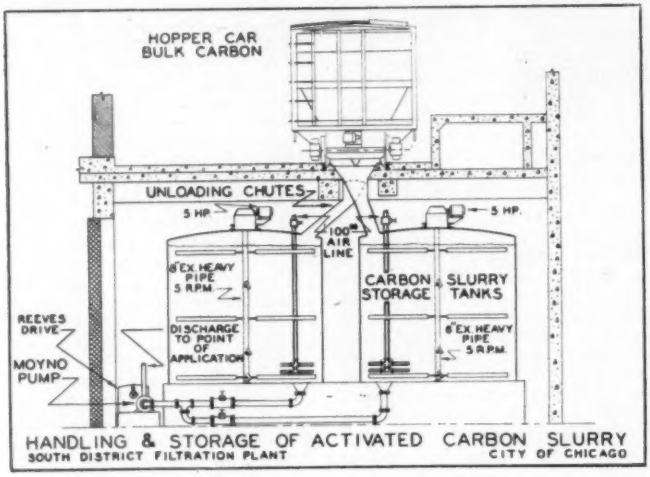
In this study Professor Adams will be aided by an advisory committee consisting of Walter H. Blucher, Bleeker Marquette, and Ladislas Segoe; and the American Institute of Planners and the American Society of Planning Officials have agreed to participate.

The study will address itself not to the physical aspects of community planning alone, but to the social and economic aspects as well.

Chicago Controls the Taste

With Carbon Slurries

Tests show, and operating results confirm, the advantage of positively removing offensive tastes from the water in the South District Filtration Plant by activated carbon slurries



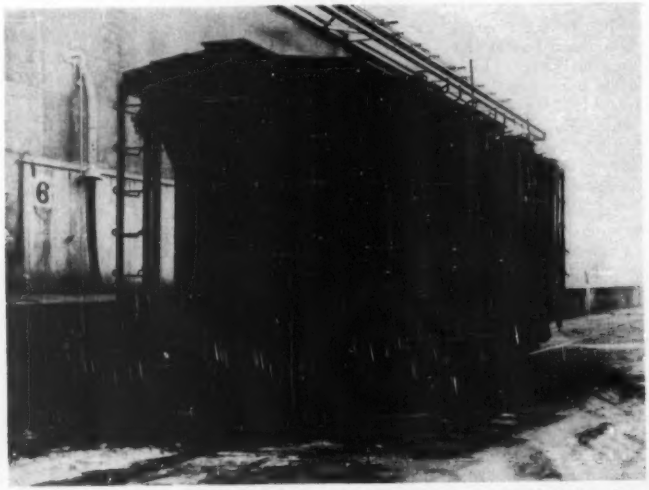
By JOHN R. BAYLIS
Engineer of Water Purification
Department of Public Works
Chicago, Ill.

THE water user can scarcely object to a taste if it isn't there. In a nutshell, that is the reason we have adopted the use of activated carbon slurries at the South District Filter Plant. In experimental work conducted from 1928 to 1938, it was demonstrated that the only means of removing taste and odor from Lake Michigan water at Chicago is by the use of activated carbon. Other methods may lessen but would not remove them as completely as is necessary to produce palatable water.

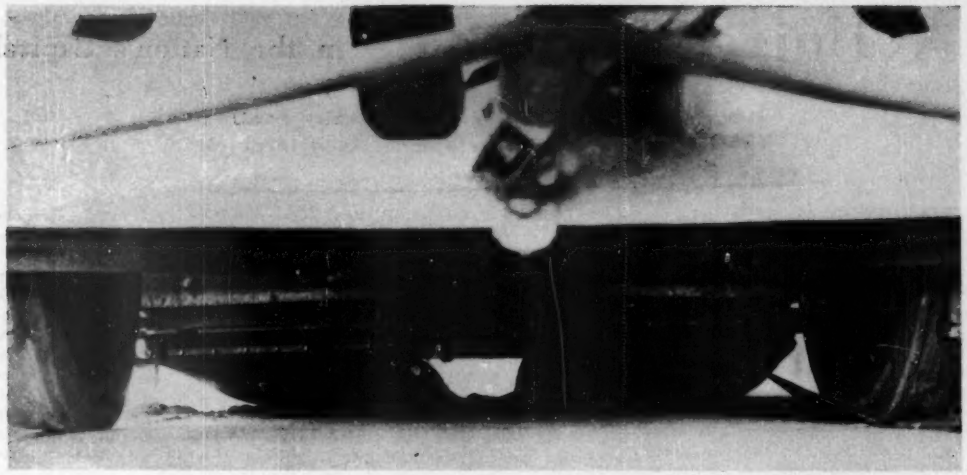
Types of Carbon Available

The carbon could be used in either the powdered or granular form. The granular form would require expensive construction in the nature of beds of carbon similar to filter beds. By the time the plans were being made, powdered activated carbon appeared to be cheaper than granular carbon. The powdered carbon is applied to the water and requires only facilities for storing and feeding.

Our design provided for floor space to store activated carbon in bags, and for dry-feed machines to feed it into the water. We anticipated trouble in feeding the carbon because of experience in other filtration plants. And this trouble turned out to be so great that soon after starting the use of carbon we began to study other means of handling it. The plans consisted of unloading from hopper-dump railroad cars into steel tanks where the slurry was agitated with pumps. However, the pumps and eductors did not produce a constant-strength slurry within the tank. We tried compressed air to aid in the mixture, and it helped to produce a uniform mixture when the tank was full, but would not maintain the mixture when the tank was nearly empty. The rubber-lined pumps installed for operating the eductors failed within a few days be-



Chicago's South District Filter Plant receives its shipments of activated carbon for taste removal in this kind of hopper-bottomed, covered railroad car.



These canvas unloading chutes prevent dust nuisances during the unloading.

cause of corrosion—probably aided by abrasion.

With this experience, the design was changed to paddle-mixing in one of the tanks. At the end of a year, the results encouraged us to install paddles in the second tank. One small, variable-speed Moyno pump for feeding the carbon was installed for trial. The maximum capacity was about 500 pounds per hour of carbon in slurry form. This proved so successful that a second Moyno pump, with a capacity of 1,800 pounds per hour, was installed.

On the basis of experience with these two tanks, we expect to put in service eight additional tanks for handling carbon in the slurry form. Six will be for receiving the carbon from hopper-dump railroad cars, and the other two tanks, known as feeder tanks, will be at higher elevation in the chemical building. The carbon slurry will be pumped from the lower tanks into the upper tanks and will be fed into the water by gravity from that point.

Hot-Threshold Odor Reduced

Odor problems have lessened slightly, notwithstanding raw-water troubles. The yearly average hot-threshold odor of the raw water for 1950 was 3.5, compared to 4.9 in 1948, and 3.3 in 1949. The maximum daily average hot-threshold odor was 60 in 1948, 17 in 1949, and 16 in 1950.

Although the odor in the raw water was less, much higher dosages of activated carbon were used for odor removal in 1949 and 1950 than in 1948, because of the policy established of maintaining a low hot-threshold odor in the plant effluent water. The yearly average hot-threshold odor in the plant outlet water in both 1949 and 1950 was 1; the maximum daily average in 1949 was 3, and in 1950 was 1. In 1948 the yearly average threshold was 2.1 and the maximum daily average was 13.

There were 14 odorous periods of 67 days during 1949 when "oil-refinery-waste" odors were present in the raw water. In 1950, there were 10 such periods and 36 days. The industrial-waste pollution of Lake Michigan from oil refineries and other industrial plants in the Calumet industrial area is still a serious problem, in spite of the fact that the wastes from the largest refinery receive partial treatment in an oil-separation and settling tank.

There was an unusual occurrence of the plankton microorganism Synura in the plant raw-water supply beginning July 15, 1949, which caused objectionable odors described as "ripe cucumbers" and "muskmelon." The odors caused by Synura were successfully removed from the water by application of approximately 70 pounds per million gallons of activated carbon.

Sources of the New Jersey County Government Dollar

WHERE do the 21 county governments in New Jersey get their money? A survey of county revenue sources reported by the New Jersey Taxpayers Association focuses additional light on the subject.

In its new publication, *County Finances*,* the Association brings together comparative figures showing the make-up of the over-all 1950 revenue dollar of the 21 county governments. Approximately 75 cents came from municipal property taxes, less than 14 cents from state payments and nearly 11 cents from various fees collected by the county. Compared with 1946, these percentages show a greater proportion of the county dollar coming from fees and slightly smaller shares from state payments and local property taxes.

The fact that the property taxes imposed by the municipalities help support the schools and the county government, as well as the municipality, often is overlooked since the property tax is paid to the municipality which then passes along to the county and to the school district their shares of these taxes.

On a county-by-county basis, the extent to which counties rely upon property taxes for their revenues in 1950 ranged downward from 85.3% in Hudson County to 47.9% in Sussex County.

Sources of New Jersey County Revenues in 1950

(Shown as percentages of total county revenue)

County	*Property Taxes*	*State Payments*	*Fees, etc.*
Hudson	85.3	7.1	7.6
Mercer	82.8	8.4	8.8
Middlesex	81.8	10.3	7.9
Union	79.0	8.8	12.2
Passaic	78.1	11.3	10.6
Essex	77.8	12.0	10.2
Monmouth	74.6	14.5	10.9
Bergen	72.8	12.2	15.0
Camden	72.5	12.3	15.2
Atlantic	70.4	20.7	8.9
Morris	67.0	22.1	10.9
Warren	65.3	26.7	8.0
Cape May	62.9	24.9	12.2
Somerset	60.8	27.2	12.0
Salem	58.1	29.7	12.2
Gloucester	56.8	32.4	10.8
Ocean	55.8	27.3	16.9
Burlington	54.7	29.0	16.3
Cumberland	50.5	39.2	10.3
Hunterdon	49.0	38.9	12.1
Sussex	47.9	29.9	22.2

* Available from the association at Broad Street Bank Building, Trenton, N. J.

A University Builds in the Nation's Capital

Historic George Washington University confronts special problems of development in a large city

By MAJ. GEN. U. S. GRANT, III (Ret.)
Washington, D. C.

PLANNING the future development of a university in a large city presents obstacles and difficulties similar to those confronted by any major community improvement project, but intensified in scope and magnitude. These problems include the high cost of land—especially where an extension means the acquisition and demolition of existing houses; the presence of churches with their strong sentimental and congregational attachments; the existence of developed streets and their traffic problems; the "hold out" property owner who will not part with his land at a reasonable price; consideration of municipal utilities in the area; the limitations imposed by zoning and building regulations, etc.

The present haphazard layout of so many of our urban universities bears evidence of the impact through the years of these difficulties. The writer had the good fortune to be asked to develop a workable plan for the future development of The George Washington University, situated in a fully built-up section of the nation's capital—the old 18th century settlement "Hamburg"—located near the site recommended by President Washington, a few blocks west of the White House and almost surrounded by federal and institutional buildings. This situation is obviously most favorable for government employees attending evening classes to improve their education and increase their earning power, for securing lectures by government experts on subjects with which they are wrestling daily, for visits by students to see their government in action in all its various phases, and for other government-university cooperation of all kinds.

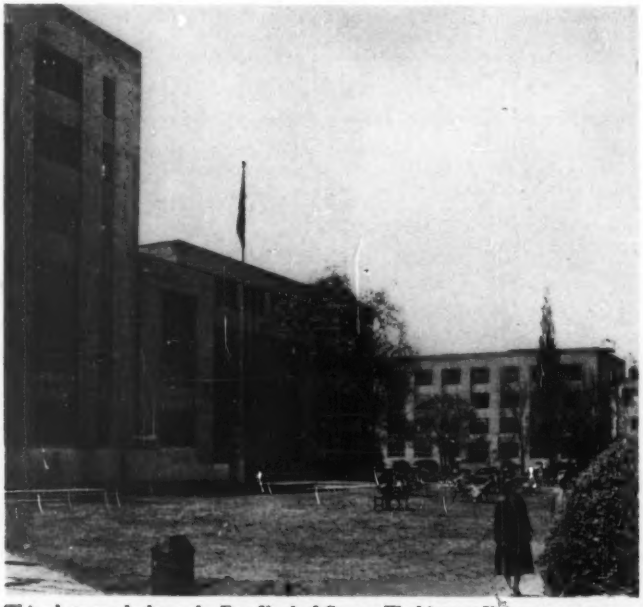
* The author is President of the American Planning and Civic Association, and Vice-President of the University whose proposed development is described.

The plan, which has benefited by the comments and advice of Frederick Law Olmstead, has been officially approved by the National Capital Park and Planning Commission, and has been discussed with the district commissioners. As zoning and similar questions have arisen, action has thus far been favorable. There are many other aspects of district-university cooperation. For example, the University Hospital serves the city without distinction as to race or financial status of patients. The University Medical School and Hospital furnish many doctors and services to the municipal Gallinger Hospital. However, though offering many advantages, the site also creates special problems.

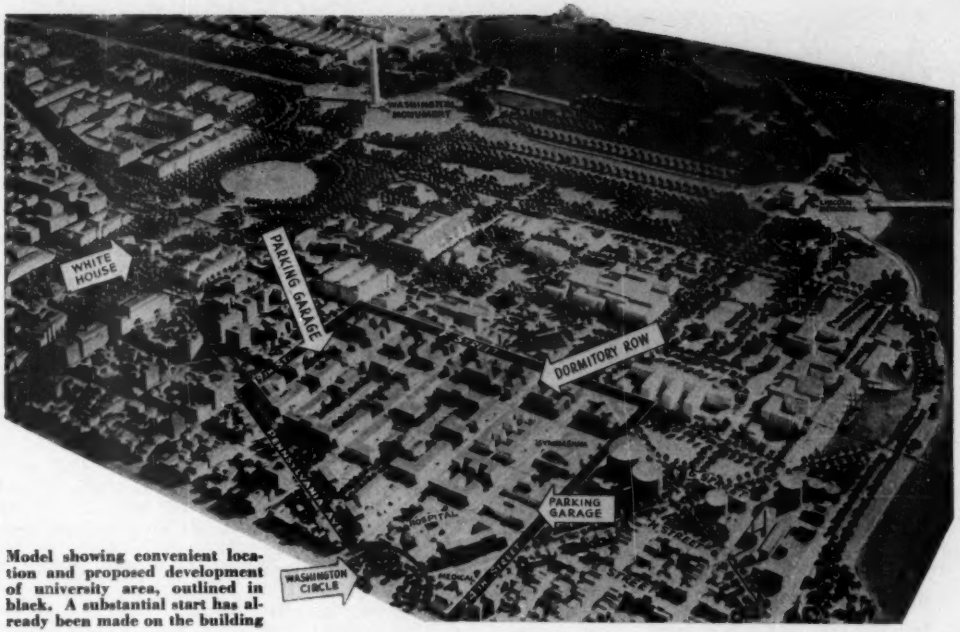
Heavily Traveled Streets

The present location—bounded on the north by Pennsylvania Avenue and Washington Circle, on the west by 24th Street, on the south by F street, and on the east by 19th Street—is traversed by the usual grid system of streets, which is necessarily a controlling factor in planning future development as more and more of the property within the area is acquired. Retention of the north-south streets for general public use is a condition that must be accepted, as they carry a heavy traffic load. However, if the city or the University can ever afford it, a tunnel for through traffic under 21st Street will facilitate the flow of the latter and permit the development of a tree-shaded mall on the surface, approximately through the center of the University.

The east-west streets carry a much lighter and more local traffic load; on H and I Streets the traffic is negligible, almost wholly originating or ending in the University area. It may therefore be assumed that H Street can be closed, when the University has acquired all the adjoining property, so the plan calls for open landscaped yards crossing H Street and enclosed by the buildings along the other streets. Openings in or between the buildings fronting on Pennsylvania Avenue will give glimpses of these yards, glimpses of the quiet and serene surroundings appropriate to an institution of higher learning, and of parks and gardens isolated from the



This photograph shows the East Yard of George Washington University as it now exists. The library and a typical new classroom building are in the left foreground and the Hall of Government at the end of the grass quadrangle. To the right of the Yard (not in the photo) is Corcoran Hall, a classroom building.



Model showing convenient location and proposed development of university area, outlined in black. A substantial start has already been made on the building program.

urban rush and clatter by the University buildings themselves. Half of one of these yards is already developed and skillfully landscaped, and is enjoyed by the students.

Gradual Building Program

The plan proposes a logical arrangement of building sites, so that additional buildings can be constructed as individual properties are acquired. This anticipates that purchase of certain existing churches and fairly modern apartment houses will be long delayed, and that they will have to co-exist for many years with successively built University structures. Certain proposed groupings more or less naturally suggest themselves: the School of Medicine, nurses home, School of Pharmacy, and a doctors' office building in the northwest, adjacent to the new hospital; the Law School and proposed Law Center in the northeast corner; the School of Engineering and science buildings on the westerly side; the Junior College and Columbian College in the southeast area; the dormitories on the south along G Street, and an automobile parking garage on each flank.

The Pennsylvania Avenue frontage, zoned commercial with a height limit of 130 feet, lends itself to a centrally located administration building with inside classrooms on the lower floors and offices on the upper floors. It would be flanked by the eight-story Law School on the east and similar buildings on the west. For the sake of the income obtainable, and to serve the University and its personnel, the ground floor fronting on the Avenue would be developed as shops and stores.

A new sizable Student Union Building, with all the recognized recreation facilities, is proposed as a central feature of the yard between 21st and 22nd Streets. A large gymnasium is proposed on the western perimeter, its exact location depending upon the open ground obtainable for informal outdoor exercise and sports.

Architectural Style

The first two classroom buildings adhered to pseudo-Georgian red brick and white trim architecture. However, it was found impracticable to obtain the optimum light and interior arrangements with this style of architecture, and the University has developed, with the professional cooperation of Faulkner, Kingsbury and Stenhouse, a candidly functional architecture of its own which, with due attention to relative proportions in the various masonry surfaces and masses and fenestration, has proved both dignified and pleasing, and not discordant with the most modern near-by government buildings.

In conclusion, the plan has developed possible building sites for a university with a registration more than twice what it is at present, and a university that is situated to assure the close association with the Federal Government that President Washington desired.

What His Honor Wants For Christmas

The Mayor of Home Town hopes he draws
This list of gifts from Santa Claus:
A citizenry that's well content
To pay for efficient government;
A council that won't make a deal
To the detriment of public weal;
A C. of C. that will not try
To pressure him with *Do or die!*
Employers who exert some care
To see that salaries are fair;
A Civil Service where no one shirks
And each man whistles while he works;
A balanced budget without any need
For higher taxes to be decreed;
A winter that's not so severe
That traffic will be tied up *here*
And garbage will be stacked up *there*
And gripes will stem from *everywhere*.
Our Mayor's features can be glistening
This Christmas — Santa, are you listening?

—A. S. FLAUMENHAFT

A Switch to Diesels Pays

Newton, Ill., supplants coal-fired equipment for three diesels in plant and lowers the operating cost from 3½ cents to

IN MOST cases, a municipal electric utility is a thrifty service for a city. Many have made substantial contributions to the financial structure of their communities while providing kilowatthours at reasonable cost. But at Newton, Ill., the municipal electric plant was a financial drag on the general fund—until last year.

Newton's electric plant is an old one; it started operating in 1894 to supply power for street lights. The first street lights operated only from sundown to midnight on nights with no moonlight. As time went on, the service grew until it carried the electrical requirements of the entire community.

Steam Equipment Replaced

Until last year, the source of power was from steam-generating units. The equipment consisted of a 625-kva turbine and two 20-by-24-inch poppet-valve engines directly connected to 250- and 312-kva generators, all operating with a condensing cycle. The turbine had seen service before it was installed in 1948. The engines had been in service since 1927 and 1934.

However, the price of coal had steadily risen, even though Newton was in a coal district. Moreover, the generating units and the boilers had become obsolete and maintenance exorbitant. The last year that the steam plant was in service, it operated with a loss of about $4,000.

In view of this discouraging record, the city decided to abandon its steam equipment and substitute diesel. Interestingly enough, the first diesel was shipped in December 1949 and was on the line in January, but before the engine could be placed in service, the steam equipment had failed outright. The high-pressure boiler developed a leak and the city was without service except for a small amount of power that could be generated to keep the water system in operation. Ultimately, the Central Illinois Public Service Company brought in a portable sub-station to tide over the breakdown.

The problem of installing the diesels was simplified because of the adequate room in the old building. By removing several abandoned smoke stacks and boilers, space was provided without requiring a new building.

Has Three Diesels

The plant now has three 800-hp Nordberg diesels, each with six cylinders of 13-inch bore and 16½-inch stroke, and are of the four-cycle, supercharged design. The engines are connected directly to 560-kw, 3-phase, 60-cycle, 2,400-volt Electric Machinery Manufacturing Company generators with V-belt driven exciters. Fuel is delivered to the plant by truck from a refinery near by. The Roper fuel-oil transfer pumps not only move the fuel from the truck to storage but also from storage to the engine day tanks. Fuel

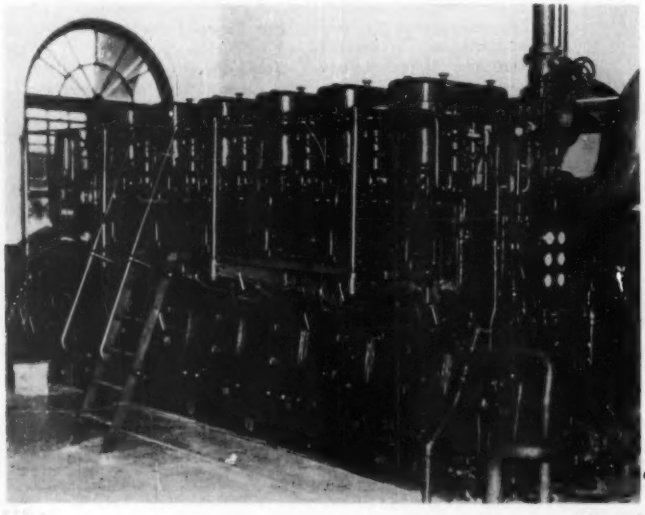
Shelbina, Mo.,

Half-century-old municipal electric plant stabilizes

By FAYETTE WEAVER
Superintendent of Light and Water Shelbina, Mo.

MUNICIPAL electric power has a 56-year history in Shelbina, Mo. (population 2,000), and has gone through five stages of development. The latest phase, recently completed, has made the plant a full diesel-electric power service.

The municipal light and power plant came into being in 1894 with the acquisition of a small steam-generating set of unknown horsepower which supplied direct current. Some time later, alternating current was introduced with the purchase of a larger steam unit. When

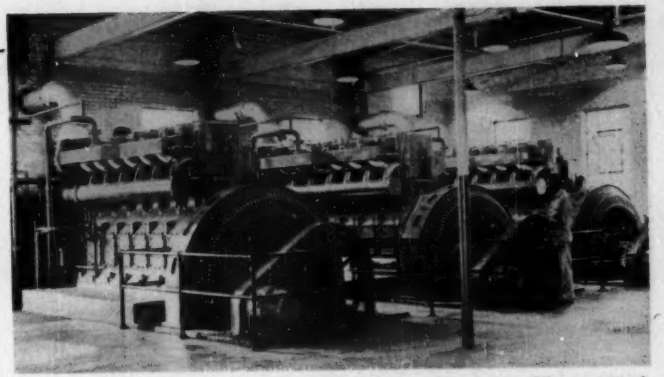


The most recent addition to the municipal power plant at Shelbina, Mo., is this Baldwin Series 700 diesel engine which has total capacity of 750 hp at 300 rpm.

Dividends

its municipal electric

1 cent per kw-hr.



These three supercharged diesels supply power for the Newton, Ill., municipal electric plant and have reduced generating costs of operation considerably.

is metered by 1¼-inch Niagara meters. Nugent dial filters, located just ahead of the built-in engine transfer pumps, filter the fuel before it is delivered to the injection pumps.

System of Plant Operation Explained

The engines are able to employ the existing cooling tower used by the steam condensing units for the cooling water system. The cooling system is closed. Worthington Monobloc pumps of 300-gpm capacity circulate raw water from the cooling tower through the lube-oil coolers and then through the jacket-water head exchanger and back through the spray nozzles in the top of the tower. Jacket water is circulated by three Worthington Monobloc pumps of 200-gpm capacity and discharge through Ross heat exchangers. These each have a capacity suitable for cooling 200 gpm of jacket water from 160° to 145° F. with 150 gpm of raw water from 114° F. A Permutit water softener is used for jacket-water treatment.

Air for the engines is filtered by three American automatic self-cleaning Cycoil oil-bath filters and silenced by Burgess-Manning snubbers mounted at the engines.

Cost Comparison

A comparison of generating costs of steam and diesel operation shows a decided advantage in favor of diesel. While no complete records are available on the steam plant, the cost per kw-hr. during the last few years, not including the period of high coal cost during the strike, averaged around 3½ cents. Although the diesel plant has not operated long enough to stabilize its generating costs, the cost per kw-hr. for last year showed a production cost of one cent. This includes fuel and lube oil, labor, and management.

The diesel-engine installation was designed and the installation supervised by S. J. Sibley Associates, Consulting Engineers. Milo Flynn is Plant Superintendent.

Goes Diesel

its operating economy with diesel power

water and sewer systems were built in 1911, a new plant was built, and a 165-hp Corliss steam engine and a 125-hp slide-valve engine were installed. This plant still houses the diesel power plant and water department.

Diesel Boosts Credit

Steam engines supplied all power until 1923, when finances and credit became so low that a car of coal could not be unloaded until all expenses of the car were paid. The Board of Aldermen then installed two 200-hp semi-diesel engines which were paid for out of the difference between the cost of coal and fuel oil. The first full diesel engine, a two-cylinder engine of 120-hp, was installed in 1932.

The 120-hp, 2-cylinder engine was the first to be replaced by a 6-cylinder diesel, of four times greater horsepower. This 6-cylinder engine, a Baldwin De La Vergne, Model VG, was installed during the summer of 1936 and is still in use after 15 years of service. Continued growth of power demand after 1936 necessitated the purchase of a 750-hp diesel engine to maintain safe capacity. This engine, a 6-cylinder, 750-hp, 500-kw Baldwin De La Vergne, Model VM, replaced one of the 200-hp semi-diesel engines in the spring of 1939.

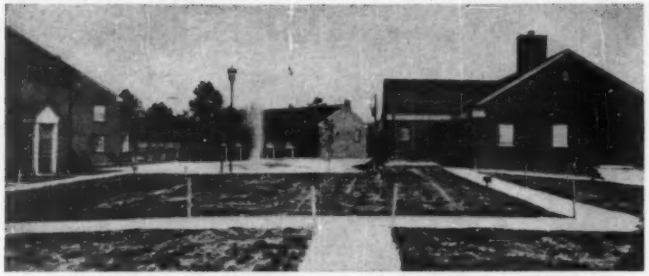
The last of the original semi-diesels was replaced by the latest model Baldwin diesel, a series 700, 750-hp engine. The three Baldwin engines now provide a total capacity of 1,980 hp, or 1,320 kw. The two 750-hp engines are used alternately every other week and carry the base load. The 480-hp unit is used with one of the 750-hp units for the peak loads. This schedule provides for an adequate maintenance program and assures unfailing power in the event of an emergency shut-down.

All current for lighting the streets, the library, and all city offices is furnished without charge. This amounted to 300,000 kw-hrs. during 1949. The Light and Water Department transfers to the general fund of the municipality $18,000 to $20,000 each year.

Cost Reductions Reflected After Diesel Installations

After the installation of the first two Baldwin units, the cost per kilowatt-hour was progressively reduced from 1.90 cents per kw-hr. to 1.23 cents per kw-hr. until 1944, when the rising cost of fuel and lubricants and general post-war inflation brought the cost up to 2 cents per kw-hr. Upon installation of the latest Baldwin engine, cost reductions were again reflected, with the present cost per kw-hr. at 1.84 cents. The engine is operated at an average load of only 275 kw. This average load is only a little over half the full load rating of the 500 kw. During peak periods the engine is stepped up from this average-load level of operation to its full-load rating.

The Outlook



Lee-Walker Heights, new 96-family low-rent public housing development built, owned, and operated by the Asheville, N. C., Housing Authority. The development is part of the nationwide program administered by the Public Housing Administration, and was built with federal aid under the Housing Act of 1949.

For Public Housing In 1952

By WARREN J. VINTON
First Assistant Commissioner
Public Housing Administration

AS READERS of THE AMERICAN CITY are aware, Congressional action has restricted to 50,000 the number of federally aided low-rent public housing units to be put under construction by local housing authorities in the 12-month period ending June 30, 1952.

This action was of the utmost significance to the public-housing program in this country, because it again represented a policy determination by the Congress that a proportion of residential construction, even in a time of national emergency, should be built for families who are financially unable to acquire privately owned rental housing.

Nation-Wide Cooperation

All segments of our national economy are being called upon to make sacrifices in favor of the nation's preparedness effort. Public housing does not look for any preferential treatment—it expects to take its stand on the home front. Sacrifices on this front should be shared equitably by all Americans. And since residential home construction has been curtailed this year—so has public housing been reduced.

Last fall, it was proposed that total home building be reduced from the 1,400,000 homes in the calendar year 1950 to about 850,000 in 1951. This is about a 40% reduction. However, the actual reduction in private residential construction this year may be less than 30%. In low-rent public housing, the cutback for 1951 has been from the 135,000 starts authorized by Congress in the Housing Act of 1949 to 50,000 starts—a reduction of 63%.

"Rationing" System Established

The Congressional limitation of construction starts to 50,000 low-rent public housing units for the fiscal year ending June 30, 1952, meant that the PHA would be obliged to set up a strict rationing system in the low-rent program. To accomplish this and satisfy everyone in the program was virtually impossible. A total of 83,395 units were scheduled to go into construction between July 1, 1951, and March 30, 1952. Those units scheduled for construction by that date or out for bids by February 1, 1952, could be considered for construction during the current fiscal year. PHA decided to schedule 62,000 dwellings to meet the 50,000 ceiling. This was assuming that there would be an attrition rate of 20%—owing to land acquisition problems, rejection of high bids, etc.

The Public Housing Administration, in administering this year's limitation, has established this order of preference:

1. All projects for which PHA had authorized construction awards or which were in the bidding process.
2. All projects whose construction is necessary to maintain racial equity in a locality. This concerned projects in those localities where low-rent housing had already been built.
3. All projects in rural non-farm localities.
4. All projects in defense areas as specified by the Office of the Administrator, Housing and Home Finance Agency. Even in these areas there would be a reduction in units if the project was unusually large, and a cutback was necessary to achieve a better distribution of the program.
5. All projects in other localities with only one project scheduled. The preponderance of projects in this category are in localities which have had no construction in the new program.
6. In all other localities with two projects scheduled:
   (a) Both projects if a total of 100 or less units was involved.
   (b) If more than 100 units, the larger of the two projects. Because of local factors, however, the local housing authority may decide to proceed with the smaller of the two projects.
7. In localities with three or more projects scheduled, approximately half of the units scheduled would go under construction. This proportion varied from 40 to 60%, because of the difficulty of splitting projects.

The low-rent housing program has come within the scope of the Controlled Materials Plan instituted by the National Production Authority. Under the NPA regulations, low-rent public housing, including those built in connection with slum-clearance and urban-redevelopment programs, together with private housing, have been covered by the system of controls regulating residential construction.

Here's how the low-rent program stood at the end of the first week in November 1951. A total of 577 projects containing 98,404 new low-rent homes have been placed under construction by local housing authorities. Of that total, 7,088 units were started after June 30. By November 9, 29% of the units included in the limitation for fiscal 1952 had at least been advertised for bids.

There are 83,270 units already covered by approved financial-aid contracts, but not yet out for bids. Of this total 31,626 units are chargeable against the fiscal '52 ceiling.

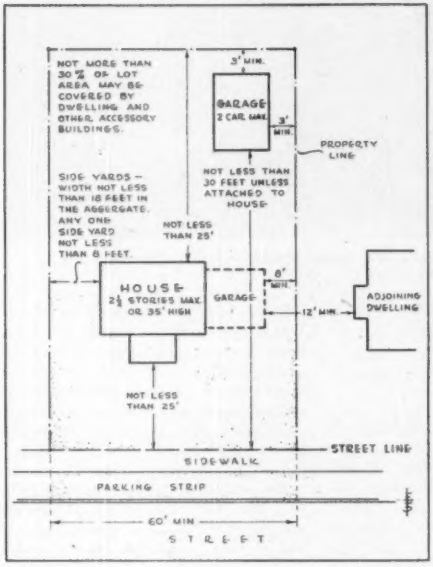
Importance of Keeping Up With Schedule

PHA has programmed about 25% more units than can be authorized for construction in the fiscal year. If a project fails to keep up with the set schedule, no substitutes will be made on the allocation list unless the rate of

attrition mentioned earlier is already 20% or more. If the attrition is less than expected, it will become necessary to withhold authorization to some local housing authorities for the taking of construction bids.

Projects which have not been put on the allocation list are proceeding up to the point where they are ready to advertise for construction bids. Projects which are not yet under annual contributions contracts are completing their programs and will enter into contributions contracts when ready. Local housing authorities which have executed these contracts will purchase land and complete all work in connection with a project, short of advertising for construction bids.

PHA is confident that local housing authorities which have worked so diligently since the passage of the 1949 Act will take the 50,000 limitation and the allocation system in stride. There is no doubt that the low-rent program would have achieved the statutory goal of 135,000 starts this year, had not the Korean conflict brought about such far-reaching changes in our peacetime economy.


NOT MORE THAN 30 % OF LOT AREA MAY BE COVERED BY DWELLING AND OTHER ACCESSORY BUILDINGS.
3' MIN.
GARAGE 2 CAR MAX.
3' MIN.
PROPERTY LINE
NOT LESS THAN 30 FEET UNLESS ATTACHED TO HOUSE
SIDE YARDS — WIDTH NOT LESS THAN 18 FEET IN THE AGGREGATE. ANY ONE SIDE YARD NOT LESS THAN 8 FEET.
NOT LESS THAN 25'
HOUSE 2½ STORIES MAX. OR 35' HIGH
GARAGE
8' MIN.
12' MIN.
ADJOINING DWELLING
NOT LESS THAN 25'
STREET LINE
SIDEWALK
PARKING STRIP
60' MIN.
STREET

A diagrammatic sketch showing zoning regulations on lot development in the residential area of Weedsport.

Weedsport Benefits From Zoning & Planning

AMONG the papers of special interest to village officials at the 1951 New York State Conference of Mayors and Other Municipal Officials, was an outline by Mayor Lester E. Partelow, of Weedsport, N. Y., of the benefits which have come to that village in fewer than five years from the enactment of planning and zoning ordinances.

Mayor Partelow has brought this summary up to date for the benefit of THE AMERICAN CITY's readers. Here are some of the steps already taken:

The zoning ordinance has prevented the establishment of a factory in a residential area; refused a permit to establish a restaurant in a residential area; regulated the location of houses on lots, the location of garages on lots, alterations to homes and buildings, and the space between buildings; controlled the subdivision of lots at a 60-foot minimum frontage, and stopped building on future street locations. Zoning has helped the village board to provide water mains and sewers of a size to care for future-service, through its fixed-development plans. At the site where a gasoline service station would have been erected in a residential area, the lot was sold and now has a modern home surrounded by lawns, shrubs, and trees.

Other Developments Since 1947

Other developments since 1947 have been the relocation of the state highway on lands of the abandoned Erie Canal. Off-street parking areas have been constructed between the village commercial zone and Route 31, with capacity for 200 cars. The plan also allows for truck delivery to the rear of business places.

A refuse area of nine acres, together with a new incinerator, has been located *outside* the village area.

For the civic center, one large and one small parcel of land have been purchased and four small parcels have been given to the village. A new storm sewer was installed and the area graded to a level through filling in an unsightly marsh area. The whole tract was cleared of brush, weeds, and rubbish.

To protect the village from the flood water of Putnam Creek to the East, an earth dike 670 feet long was constructed along the eastern boundary of the village.

A section of the New York State throughway is under construction 1¼ miles north of the center of the village. The first entrance and exit west of the Syracuse area will be at Weedsport, according to plans.

The experience of the Village of Weedsport in working together in planning and zoning has produced other results:

A Youth Commission Program is conducted annually. For three years Weedsport has conducted a "Paint-up—Clean-up Campaign" with excellent results and was listed on the national Honor Roll last year.

Modern street lights have been placed in the business section and on the main traffic streets.

A new and modern one-story addition to the Fire Department building has been constructed, and the original building modernized with new front and overhead doors.

Each year a spray program to control fly, mosquito, and elm-leaf-beetle infestation in the village area is provided.

Some 30 building permits, four private-garage permits, and several alteration permits have been granted. With few exceptions, all have complied with the zoning regulations.

Public Support

"People are becoming more aware of the benefits and possibilities and less resentful of the restrictions," writes Mayor Partelow. "They are assured that in building a new home, a factory or garage cannot be located in the next lot. And they are aware of better fire protection through the proper spacing of buildings.

"A live community continues to grow year by year. Plan well for a progressive future. Why not establish a program of zoning and planning in your community?"

Local, State, and Federal Purchasers Meet in Washington, D. C.

Members of the National Institute of Governmental Purchasing at a recent luncheon held in Washington.

By JOSEPH W. NICHOLSON
City Purchasing Agent
Milwaukee, Wis.

THE National Institute of Governmental Purchasing, Inc., held its Sixth Annual Conference and Products Exhibit at the Shoreham Hotel, Washington, D. C., October 21 to 24, inclusive. More than 800 representatives of states, counties, and cities were present. The theme of the conference was "More Value for the Tax Dollar." The purpose of the conference was to effectuate the following principles of the Institute:

- To study, discuss and recommend improvements in governmental purchasing
- To interchange ideas and experiences and obtain expert advice on local, state, and national governmental purchasing problems
- To collect and distribute to governmental-purchasing officials information on the organization and administration of governmental buying
- To develop and promote simplified standards and specifications for governmental buying
- To promote uniform purchasing laws and procedures
- To work for or against proposals affecting the welfare of governmental buying agencies
- To give to taxpayers information on governmental buying problems in order to foster interest in public affairs and cooperation between governmental buyers and those they serve.

The conference began with an informal reception and smorgasbord dinner on Sunday, October 21, when Alvin J. Holm, first president of NIGP, was awarded a plaque for his outstanding contribution to the organization and development of the Institute. Monday at 9:45 a.m., the Products Exhibit, consisting of 110 products of types in which public purchasing officials are interested, was officially opened by the Board of Directors. The conference was called to order at 10 o'clock by President Michael Donohue, who spoke on the theme, "More Value for the Tax Dollar," showing how the Institute has assisted its members in achieving this objective through more efficient operation of their departments and through the cooperation and assistance of NIGP.

Discussion Topics

An official luncheon followed at 1 p. m., which was addressed by Vice-Admiral Charles W. Fox (Chief of Naval Material, U. S. Navy, Washington, D. C.), who spoke on the development of standards and specifications, and the storing and use of materials for the U. S. Navy. The afternoon session was concerned with the use of specifications for petroleum products, presented by E. S. Korb (Sales Manager, Wholesale Marketing Division, The Pure Oil Company, Chicago, Ill.); the organization and preparation of a purchasing-department policy manual, by John M. Pierce (City Purchasing Agent, Wichita, Kans.); and tips on buying, a round-table discussion of purchasing problems in a selected group of commodities, led by President Michael Donohue. On the last subject, one of the most important items discussed was the lack of definite specifications for motor tires, and the desirability of the development of nationally recognized specifications, which could be used by governmental agencies in obtaining competitive bids for the purchase of motor tires.

On Tuesday, breakfast meetings were held for public-purchasing executives, who were divided into groups consisting of state purchasing agents, under the chairmanship of C. L. Magnuson (Supervisor of Purchases, State of Connecticut, Hartford), educational buyers, under the leadership of Floyd G. Hoek (Secretary-Business Manager, Board of Education, Asbury Park, N. J.); city, county and special authorities and districts (serving populations up to 150,000)—chairman, B. L. Gill, City Purchasing Agent of Madison, Wis.; and a similar group serving populations in excess of 150,000, under the chairmanship of A. L. McMillan (Director of Purchase, Department of Purchase, City of New York). After breakfast, a conference session was held concerning "Economic Controls and the Public Buyer." This conference was directed by a panel consisting of representatives of National Production Authority agencies concerned with the materials, supplies, equipment, and contracts of public agencies. At 1 o'clock an official luncheon was addressed by Jack Gorrie (Chairman, National Security Resources Board, Washington, D. C.), who explained the purposes of the Board which he represented in relation to national and international conditions. The

general conference session was resumed at 2:45, when Clifton E. Mack (Commissioner, Federal Supply Services, General Services Administration, Washington, D. C.) explained that safeguards thrown around governmental purchasing require the same paper support for any expenditure. As 75% of the 5,000,000 annual purchases of the United States Government is for items costing less than $10, the cost of the paper work involved is something to watch and minimize. Mr. Mack urged scheduling to avoid frequent ordering, maintaining stocks of the common-use items, and using a combined purchase order, voucher, and bill. He recommended greater utilization of government property by "knowing what you have, how much you have, and where it is." Close attention should be given to maintenance programs and contracts, and to the development of replacement standards.

On Wednesday, breakfast meetings were again held by the same groups of state, educational, city, county, and special-authorities groups. There was then a general conference on the subject, "The Organization and Administration of Public Purchasing Departments," led by Miss Mary E. O'Connor (Director of Purchase, New York State, Division of Standards and Purchase, Albany, N. Y.). This conference adjourned for lunch, and was again in session during the major part of that afternoon. This was followed by the election of officers. The following officers were elected:

President, Arthur B. Gathright, Director, Division of Purchase and Printing, Commonwealth of Virginia, Richmond; First Vice-President, John Splain, Commissioner of Purchase, New York City; Second Vice-President, Carl Riggs, Director, State Department of Purchases, State of West Virginia, Charleston, and Treasurer, John W. Huffman, City Purchasing Agent, Richmond, Va.

The 1952 Conference and Exhibit was announced for Chicago in October. The 1953 meeting will be held in Cincinnati in October of that year.

Philadelphia Emergency Lighting Act Safeguards Public Assemblies

PHILADELPHIA'S ordinance requiring places of public assembly to provide emergency lighting service is receiving proper attention, according to Edgar P. Grim, Chief of the city's Electrical Bureau. The cooperative spirit shown by operators of such places stems from the cooperative attitude reflected by the Bureau. Though the ordinance passed March 28, 1951, and was expected to be in force June 1, the Bureau recognized the need to assist churches, hotels, and other places of assembly to obtain proper equipment. Upon request the Bureau offers an inspection service which includes a visit to the property and a layout and a recommendation of the number of emergency lights required at the location. Often fewer lights are suggested than the number foreseen by the owner of the building.

The places covered by the ordinance include certain theaters, motion-picture houses, night clubs, dance halls, restaurants, department stores, schools, below-ground areas, hotels and all places of public assembly with a capacity of 100 or more persons, fixing minimum requirements, and providing penalties for violations. While the urgency of civil defense provided a lever for getting the ordinance over, this measure was desired by the city for a long time, for reasons of common safety in the event of interruption of the regular incoming electric service.

Minimum requirements include units stenciled "Emergency Lighting Unit," and connected to a 110-volt outlet. The units must consist of a six-volt storage battery with a 50-watt output that will last for at least two hours, with a voltage drop not to exceed 21%, with pilot light to indicate that it is properly connected for operation; an enclosed battery trickle charger and an automatic relay which operates the battery lights in the event of outside electric-service failure and disconnects the battery lights and places the battery charger in circuit when the regular electric service is resumed. Emergency units that are equipped with auxiliary lighting equipment exceeding the minimum requirements and accomplishing the same purpose are acceptable.

Diners in Ewart's Cafeteria in Philadelphia, Pa., are safeguarded against light failure by an Exide Lightguard unit which is encased in wood to match paneling on column.

One of the many sales rooms at Lit Brothers, a large Philadelphia department store, in which a two-light Exide unit was installed to protect shoppers against light failure.

No More Clogged Sewage Pumps

Fibrous solids were a headache until two bladeless trash pumps were installed in a pumping station used by the Baltimore County Sewage System

TWO of the first bladeless trash pumps to go into regular service in the field have solved a difficult sewage-handling problem for the Baltimore County Metropolitan District. They have converted a trouble spot that required servicing every day in the year into a completely automatic pumping station.

Waste Problems

The Joppa Road Pumping Station at Towson, Md., with a capacity of 500,000 gallons per day, gathers sewage from a broad area and pumps it down the main line to the treatment plant. Most of the area served is residential, but two factors complicate the Joppa system. First, five industrial plants discharge a variety of difficult waste products into the line. Second, and most important, a near-by tuberculosis hospital sends through the pumps a large volume of rags, towels, bandages, and cotton. Actually, a high percentage of the sewage handled by this station is the kind of fibrous solid that clings to impeller blades and clogs pumps.

Two "non-clog" trash pumps were installed in 1941, but failed to meet the challenge. This originally was designed as an automatic station but, according to Superintendent of Maintenance Berley Ambrose, it was necessary to visit Joppa Road twice a day to service pumps clogged with rags, towels, and other waste. As Mr. Ambrose expressed it, "the pumps had no feeling for a man's rest, even clogging up on Sundays."

Immediately after the formal announcement and demonstration of the new bladeless sewage and trash pump by Fairbanks-Morse on November 3, 1949, George W. Welsh, Assistant Chief Engineer of Construction and Maintenance for the Baltimore County Metropolitan District, ordered two 4-inch bladeless horizontal trash pumps, which were connected directly to 15-hp, 1750-rpm motors already in the Joppa Station.

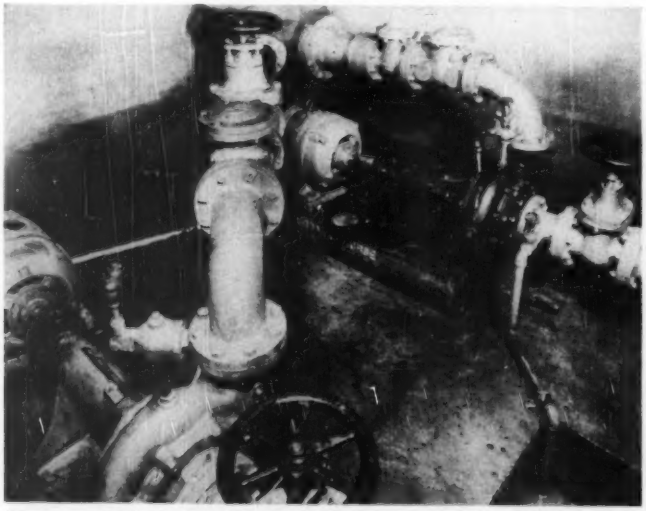
The new pumps were installed on January 12, 1950, and have been in continuous operation ever since. Not only does the same type of sewage pass through the station, but the quantity has increased greatly in the past year. Yet, Mr. Ambrose reports, there has not been a single instance of pump clogging or a minute's operating time lost. In fact, the handholes on both pumps have never been opened to clear the impeller passageway since the pumps were installed. The screening bars have been removed temporarily for repairs, but the bladeless pumps continued to handle sewage during the time the bars were off with no evident change in operating effectiveness.

Each of the two pumps has been in service more than 14,000 hours without clogging. As compared with station experience with the old pumps, this has meant the elimination of more than 1,000 service calls.

Trouble-Free Operation

Today Joppa Road Station is completely automatic. There is no operator in attendance and the only servicing required is to lubricate the equipment once every four or five months. Pumps and motors are housed in an underground concrete chamber and residents of the area probably are unaware that the station exists. But the pumps with their bladeless impellers are in continuous service, doing unfailingly one of the toughest jobs a sewage pump can be called on to perform.

In the opinion of William F. Neale, who was Chief Engineer of the Baltimore County Metropolitan District from 1948-50, these bladeless pumps are "the best thing that has happened to sewage-pump handling in my time, especially for pumps of 6 inches or smaller." He feels that too much emphasis has been placed on efficiency rather than trouble-free operation. Mr. Neale is presently affiliated with the engineering firm of Whitman, Requardt and Associates of Baltimore. The Board of County Commissioners, when the Joppa station was built, consisted of Christian H. Kahl, president, John R. Haut, and Bremen A. Trail.



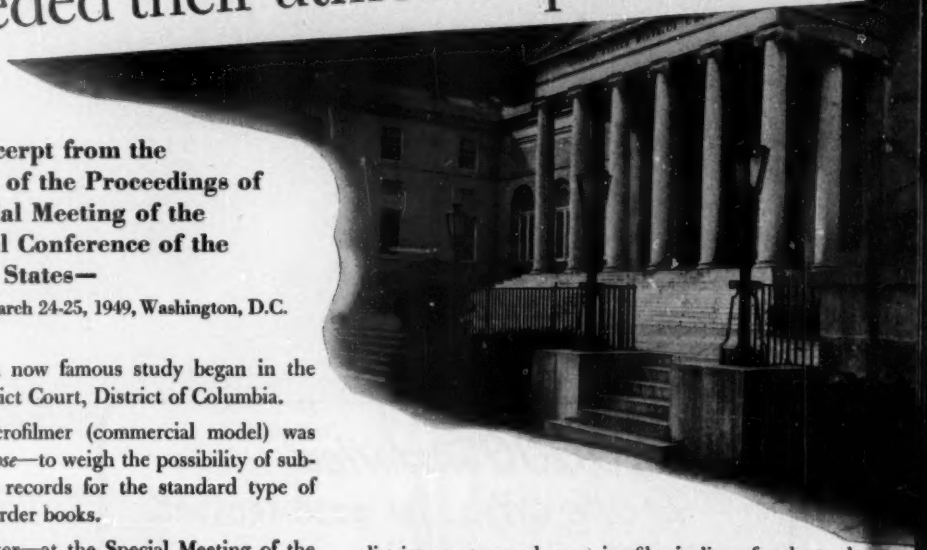
These two Fairbanks-Morse Figure 5422K bladeless horizontal trash pumps, which are part of the installation at the Joppa Road Pumping Station, at Towson, Md., have handled industrial wastes and hospital refuse such as towels, bandages, and cotton for more than 14,000 hours without clogging. Each pump, rated at 320 gpm at 72-foot total dynamic head, is driven by a 15-hp motor.

Speak Plainly

If you would make a speech or write one,
Or get some artist to indite one,
Think not, because 'tis understood
By men of sense, 'tis therefore good.
But let your words so well be planned
That blockheads can't misunderstand.

Author unknown

"the results obtained therefrom exceeded their utmost expectations"*



***an excerpt from the Report of the Proceedings of a Special Meeting of the Judicial Conference of the United States—**

March 24-25, 1949, Washington, D.C.

In July, 1948, a now famous study began in the United States District Court, District of Columbia.

A Recordak Microfilmer (commercial model) was installed. *The purpose*—to weigh the possibility of substituting microfilm records for the standard type of court minute and order books.

Eight months later—at the Special Meeting of the Judicial Conference of the United States—authorization was sought by the Chief Judge and Clerk of the U. S. District Court (D.C.) to begin a microfilming program. In this connection it was estimated that:

"... the cost of the new system would be less than one dollar for every twenty-five dollars of costs under the present system.

"... one file cabinet, approximating 3′ x 3′ x 6′ in size would provide adequate and sufficient storage space for the records involved for thirty-five years ...

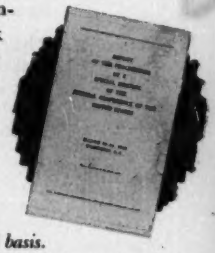
"... the business of the court would be considerably expedited.

"... the services to the bar and litigants materially improved."

Result: On April 20, 1949, authorization was granted by the Judicial Conference of the United States to the Clerk of the United States District Court (D.C.) to maintain district court records on microfilm in lieu of order and minute books—

1. "In all civil cases and proceedings except adoption proceedings, each judgment and order.
2. "In criminal cases and proceedings, each judgment, order, indictment, bond, and all other formal entries of Court transactions."

Write Recordak today for a copy of this interesting pamphlet on the "Report" ... and information on the line of Recordak Microfilmers, which are now serving numerous Federal, State, and Municipal agencies. Recordak Corporation (*Subsidiary of Eastman Kodak Company*), 444 Madison Avenue, New York 22, N. Y.



Note: *Recordak Microfilmers are now offered on an attractive purchase or rental basis.*

"Recordak" is a trade-mark

RECORDAK

(Subsidiary of Eastman Kodak Company)

originator of modern microfilming—and its application to government routines

Over 10,000 installed in one city... for good reason!

Installing a good street lighting system is only part of the job. Equally important is the maintenance of that system. For example, Cleveland gets these maintenance advantages by using the AK-10!

1. They save time on routine washing and relamping because of the automatic latch-on device. Maintenance is a speedy one-man operation.
2. They get longer reflector life because this is the heaviest aluminum reflector of any unit of its type available today. This provides greater mechanical strength and a better reflecting surface.
3. They get better maintained lumen efficiency throughout the life of the lamp, because this unit is 25% larger than other units and, therefore, has a lower operating temperature.

Check the standardized line of interchangeable street lighting units available at Westinghouse. Send today for B-4237, Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

YOU CAN BE SURE... IF IT'S

Westinghouse

LIGHTING DIVISION

Edgewater Park, Cleveland

J-04301

Thousands Attend City's White Way Fete

By R. B. WILLARD
Executive Secretary
South St. Paul Civic and Commerce Association

FIRST night of South Saint Paul's White Way was colossal, and was featured in *The Daily Reporter* of August 4, 1951, the morning after the parade.

The Lighting

The new lights on Concord Street, main thoroughfare in South St. Paul, Minn., are mounted on Union Metal poles 30 feet high and spaced 120 feet apart and staggered so that there is a light every 60 feet. The 63 poles cover a stretch of 7½ blocks in the business area. The General Electric luminaires contain 10,000-lumen, incandescent lamps. The old lighting consisted of lights mounted on wooden poles with bracket arms, 7,500 lumens.

South St. Paul Queen, Jo Ann Deering, rode the Civic and Commerce Association's float in the White Way parade.

This system was the culmination of a long-time drive for funds from Concord Street property owners by the South St. Paul Civic and Commerce Association. Attainment of the objective was climaxed by the hearty celebration. The first two days were devoted to a Water Carnival at a city park, managed by the city recreation department. The festivities of the next two days were sponsored by the Civic and Commerce Association. The stores put on mer-

WELCOME
To
SOUTH ST. PAUL'S
Crowning Event
"THE WHITE WAY
IS NOW UNDERWAY"
you will find events galore to enable you to have Western Fun right here in South St. Paul.
The pages of this paper should make it evident that everyone has gone all out to make White Way Days ones to be long remembered.
Our White Way Celebration marks a notable advancement in this City's Lighting System and general progress.
THE DAILY REPORTER

Hon. Harold E. Stassen participated in the gala celebration parade as a Hook-em-Cow rider.

chandise displays, and in the evenings drawings were held for $250 in merchandise-prize certificates.

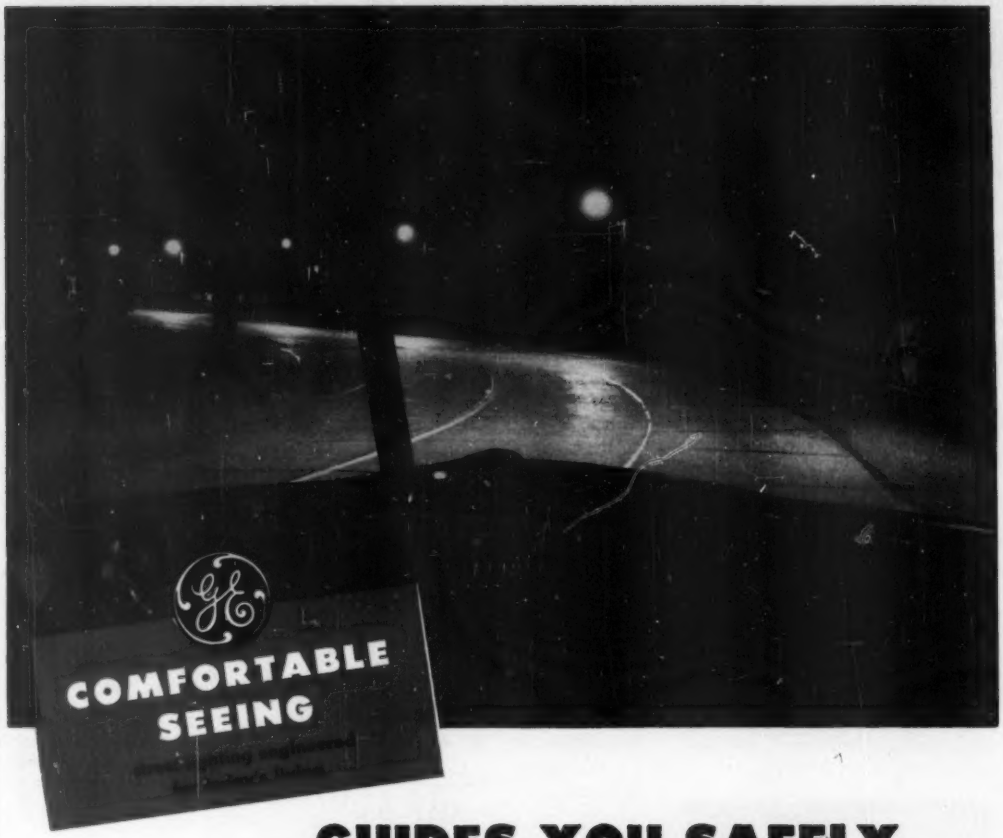
Prominent in the parade was Hon. Harold E. Stassen, president of the University of Pennsylvania, a former South St. Paul attorney who still maintains residence in the city. At the lower right is South St. Paul's White Way Queen Jo Ann Deering, in jeweled tiara and crimson cloak. Her Civic and Commerce Association float preceded the cars containing the city officials and civic leaders. Barbecues were held afternoons and evenings, as were dances—square and modern.

Peoria's Complete Mercury-Vapor Lighting System

By WALTER B. MARTIN
Manager, Retail Council
Association of Commerce
Peoria, Ill.

THE Retail Council of the Peoria Association of Commerce started to work on a new mercury-vapor lighting system for the loop area on December 4, 1947. On that day 22 businessmen and the City Engineer traveled to Rock Island, Ill., to view the installation in that city. In the spring of 1948, petitions were circulated on 56 blocks of the City of Peoria and the signatures of over 60% of the property owners were obtained, indicating they were willing to be assessed on the front-foot basis for the new mercury-vapor lighting system.

The City Council approved specifications and, on June 1, 1951, 56 blocks of the Peoria loop district were dedicated with the first use of the mercury-vapor lighting system which uses 403 General Electric Form 109 luminaries. The program started with a reception by the General Electric Company and Central Illinois Light Company, to which were invited the mayors and city officials of the surrounding areas, the



GUIDES YOU SAFELY

Most streets are ten times as dangerous at night as in the daytime. This is proven by accident statistics in community after community.

Many communities have also proven that adequate street lighting can cut this high night rate down to daytime level.

In Detroit, where 31 miles of streets were relighted the ratio of night to day fatalities was cut from 7 to 1 to 1.1 to 1. In Hartford Connecticut the relighting of 27 miles of streets cut the traffic deaths from 37 to 5 a year.

Today, progressive communities across the country are preventing accidents—saving lives—by reducing night accident rates to the low day rates with Comfortable Seeing.

Your electrical utility is vitally interested in your community's welfare. They have the know-how to help you modernize your street lighting quickly on an economically sound, planned basis. They can call on General Electric's services for planning and consultation.

G-E street lighting equipment has the flexibility to give you Comfortable Seeing engineered to meet the specific needs of your community. *Apparatus Department, General Electric Company, Schenectady 5, New York.*

Let your electric utility street lighting engineer show you how comfortable seeing SAVES YOU FAR MORE THAN IT COSTS.

GENERAL ELECTRIC

452-10

Peoria aldermen, and the Association of Commerce Street Lighting Committee. We believe 403 lights in this system makes it the largest single installation in any business district in the United States.

Luminaires Multiply Light Sevenfold

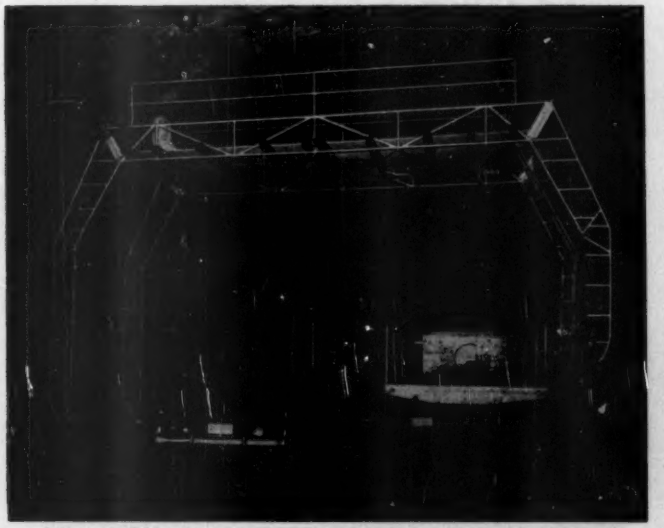
The luminaries are mounted on 6-foot upsweep brackets at a height of 26½ feet on Union-Metal steel poles. Spacing is 72½ feet, staggered. Equipped with 15,000-lumen, 6,000-hour AH1 lamps, the new luminaires provide an average illumination of 1.8 foot-candles, which is approximately seven times that of the former system. A multiple circuit is used and all wiring is underground. The equipment was purchased from Graybar Electric Company at a cost of $248,000. It was installed for the city by independent contractors.

Dedication festivities included a reception and buffet luncheon. A parade consisting of seven bands, drum and bugle corps, and marching units started through the loop district at 8 p.m. From a stand erected in the Court House Square, official dedication ceremonies were conducted, with Mayor Malone turning on the lights at 9 p.m. W. H. Daley, chairman of our original lighting committee, and now located in Madison, Wis., came to Peoria to act as master of ceremonies. Commissioner of Public Works John F. McKiernan was general chairman of the celebration.

Following the turning on of the lights, a public street dance was held on Main Street. In a specially roped-off area old-fashioned square dancing and modern dancing prevailed until 11:30 p.m. to the tunes of a five-piece orchestra. Approximately 20,000 people viewed the parade and ceremonies.

Peorians square-dance to the light of mercury-vapor lamps on Main Street.

Mercury Vapor for Tunnel Lighting



A rolling scaffold fitting the tunnel permitted installation of lights without interrupting traffic. The scaffold was test-loaded for a 5,000-pound dead load.

By H. W. TYLER
Principal Design Engineer
Engineering Department
Seattle, Wash.

MERCURY-VAPOR lamps not only can be used sucessfully for tunnel lighting but, where the section is circular, can be installed at a fraction of the cost of fluorescent lighting. If traffic is uniditeccional, this system becomes most advantageous.

The Lake Way Tunnels entering Seattle on U. S. 10 have been lighted by this means, and the results have been gratifying. The tunnels are two-lane, 1,466-foot twin bores that carry one-way traffic. Built in 1940, the tunnels originally had a sodium-vapor lighting system in which the lights were supported close to the ceiling at 60-foot centers.

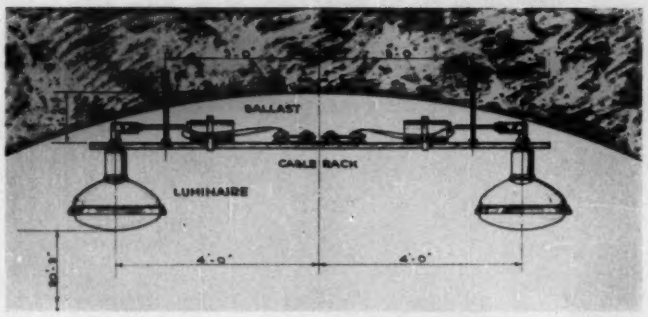
The recent relighting was part of Seattle's $4,000,000 street-lighting program. Top-mounted, horizontal-burning Westinghouse OV-20 luminairies were suspended from specially mounted racks at 40-foot centers, with 20,000-lumen mercury-vapor lamps. The racks also carry individual ballasts for each

Merry Christmas
AND A
Happy New Year
TO ALL OF YOU...
FROM ALL OF US AT
LINE MATERIAL CO.
(A McGraw Electric Company Division)

lamp and cables that provide power on a multiple-circuit system. Mounting height of the luminaires is 20 feet, and each luminaire is provided with a special shield that is attached to the side facing on-coming traffic.

Average intensity of light on the roadway surface is 4.3 foot-candles. At 60 feet from the tunnel entrance, the intensity is 47 foot-candles. General Electric photoelectric cells turn off the entrance lights when daylight intensity reaches 500 foot-candles, and turn on the lights when daylight intensity goes below 400 foot-candles.

An interesting traffic-handling problem developed during installation of the new light. Should the tunnel be closed to traffic or confined to one lane, and could the safety of the workmen be assured in a dark tunnel? A special scaffold built by the Beatty Safway Scaffold, Inc., 415 Bryant St., San Francisco, Calif., which spanned the roadway from the sidewalk on one side to the curb of the opposite side, was the answer. The scaffold provided a working platform above the roadway with 14½-foot vertical clearance and ample horizontal clearance for two lanes of traffic. A string of red warning lights protected the leg of the scaffold that rested on the pavement. Pneumatic-tired wheels supported the total weight of 1,500 pounds and the whole rig was rolled along by two workmen. The scaffold was made in demountable sections so that it could be taken apart and stored.



Frames supporting luminaires, ballasts, and cable racks.

Total construction cost was $21,700 for both bores, or $7.42 per lineal foot of single tunnel. Estimated cost of a fluorescent system for the same level of illumination was $77,800, or $26.50 per lineal foot. Where a mounting height of 20 feet can be obtained, an economical and efficient job can be done with mercury-vapor lights.

Engineering work was supervised by R. W. Finke, City Engineer of the Department of Engineering. Design was under the supervision of the author. Construction work was by the Holert Electric Company.

Four-Ball Fixtures Take Their Base As Fluorescents Come to Bat

LYNDONVILLE, ski resort in Vermont's Green Mountains, has become the first town in New England to put into operation a fluorescent street-lighting system. The community of 1,500 persons, moreover, is the only town in the nation having a fluorescent-lighted main street.

It consists of 10 of the largest-type street-lighting fixtures in the world. The 8-foot-long fluorescent luminaires, developed by the General Electric Company, were installed by the Lyndonville Municipal Electric Light Plant. Each of the new units is equipped with four Slimline lamps with a total output of 22,000 lumens.

Mounted on aluminum poles 30 feet above the 60-foot-wide main street, the giant tubular fixtures are spaced 75 feet apart, in a staggered arrangement. Providing an average calculated illumination of one foot-candle, they replace an incandescent system that consisted of three- and four-ball globe fixtures mounted 10 feet above the street. According to Lee Gray, manager of the town utility, "the new fluorescent units, because of their much larger light source, provide a diffused yet bright light which is almost glareless. Adequate street lighting has become an important factor in community life. The new installation provides a high level of 'see-ability', resulting in increased safety to motorists and pedestrians."

Before the installation of fluorescent street lights in Lyndonville, Vt., streets were unevenly lighted by mid-street fixtures, as above. With the installation of a

fluorescent street-lighting system, the first in a New England city, Lyndonville's streets have been evenly lighted at a calculated illumination of one foot-candle.

» TO INSURE TOPS IN

JEFFERSON

For Proper Starting and Operation of Mercury Vapor Lamps

Mercury Vapor Lamps have now proven their unusual *high lighting efficiency and low operating cost.* Being of the gaseous-discharge type they require means of providing the correct starting and safe operating current . . . The Transformers as made by Jefferson Electric perform these functions,—providing the correct voltage and current needed for sure starting—and operation. Without this control, lamp brilliancy and life are adversely affected.

LIGHTING EFFICIENCY

JEFFERSON TRANSFORMERS PROVIDE THESE FEATURES

- Designed to insure proper control of the current characteristics to predetermined specifications, so important to satisfactory mercury lamp operation.
- Flexibility—The same transformers may be used for mounting on a wall or pole—*and by means of the Jefferson-developed Adaptor fit any pole top from 2½ to 4-in. diameter.* Reduces stock to be carried.
- Moisture and weatherproof deep-drawn one-piece galvanized steel case with weatherproof paint finish.
- Liberally designed for long life.
- Types for multiple (normal and high power factor) or series circuits.
- All multiple circuit transformers have three primary voltage taps to closely match the line voltage for best possible lamp operation.
- Traditional Jefferson Quality Throughout.

Transformer for attaching to pole or wall.
Same Transformer fitted to Adaptor for pole-top installation. The Adaptor fits any pipe from 2½-in. to 4-in. diameter.
Pole-Base Type Transformer.

TRANSFORMERS

FOR MERCURY VAPOR LAMPS

This nameplate identifies all Jefferson-designed Transformers—carries all data and connection information.

Made Expressly for Mercury Lamp Operation by Transformer Specialists

For over 35 years Jefferson Electric Transformers have demonstrated the excellence of their design, precision manufacture and long-life dependability. Specialized engineering ability and experience have built a reputation widely acknowledged in the field of so-called "small" transformers.

You can be sure that the operation of your mercury lamps will give you better satisfaction when you install transformers built by Jefferson specialists.

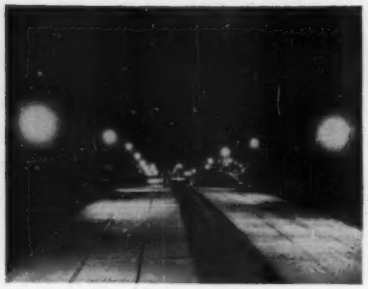
New Bulletin 521-5 contains complete data. We'll be glad to forward a copy on request.

JEFFERSON ELECTRIC COMPANY • Bellwood, Illinois

In Canada: Canadian Jefferson Electric Co., Ltd., 384 Pape Ave., Toronto, Ont.

Atlanta's famous Peachtree St. Notice the graceful, clean-lined Monotube poles. 8-ft. brackets at mounting height of approximately 28 feet.

Whitehall St., brilliantly relighted.



Portion of the new expressway. Monotube poles support 16,000-lumen mercury units.

Brighter gateway to the South!

ATLANTA, Georgia, is making its street lighting "dreams" come true—thanks to a carefully planned five-year relighting program started in 1947. In the downtown White Way area, gracefully tapered Monotube poles now support 16,000-lumen mercury luminaires. Main traffic arteries and residential sections were also relighted—with 10,000- and 6,000-lumen fixtures. In addition, a new, multi-million dollar, 32½ mile expressway is under construction—also to be Monotube equipped. The five-year program was planned by Mr. Dewey L. Johnson, Atlanta's Superintendent of Electrical Affairs, and Mr. Joe B. Browder, Division Lighting Engineer for the Georgia Power Company.

Monotubes were chosen for this outstanding improvement project, as they are in so many cities and towns, because they are readily adaptable to all street lighting requirements. There are standard ranges in pole size, gauge, height and bracket spread to meet *any* condition. Round and fluted types are suited to every kind of service—from residential areas to arterial highways and the finest "White Ways".

Find out how Monotube poles can help your community achieve street lighting modernization—efficiently and economically. For information, write The Union Metal Manufacturing Company, Canton 5, Ohio.

UNION METAL

Monotube Street Lighting Poles

Ann Arbor Close to Sufficent Parking Facilities

STOP fooling with the parking problem; Ann Arbor solved it, why don't you? After that article appeared in the December 1949 issue of THE AMERICAN CITY, 63 cities wrote Mayor William E. Brown, Jr., of Ann Arbor, Mich., and the Mayor made pilgrimages to 22 of them to deliver the doctrine of use of parking-meter revenue and of such revenue bonds as are needed to bring into being a system of parking on and off the street, to satisfy a municipality's and its visitors' requirements.

Ann Arbor Did It

In 1947 there were no cars parked by an orderly plan. They just parked and double parked. During the fiscal year ended June 30, 1951, there were 300,000 cars parked in municipally owned off-street space. The system was set up by Ordinance 83 passed August 18, 1947, defined as "An ordinance to combine all municipal automobile parking facilities, including both street parking and off-street parking, in the City of Ann Arbor into a single automobile parking system, to be operated as one system on a rate basis; to acquire and construct additional parking lots and facilities for off-street parking; to authorize the issue of self-liquidating revenue bonds to pay the cost of such additional lots and facilities; to provide for the retirement of such bonds from the revenue of such system; to create a statutory lien on such revenues; and to provide for other matters relative to said bonds, the automobile parking system and the revenues therefrom."

A second ordinance (No. 84) passed July 19, 1948 authorized "The construction of a parking garage as an addition to the automobile parking system of the city of Ann Arbor, authorizing and providing for the issuance of self-liquidating revenue bonds of equal standing with the revenue bonds, now outstanding, for the purpose of paying the cost of such addition to said automobile parking system under the provisions of Act 94, Public Acts of Michigan, 1933, and Ordinance No. 83 of the City of Ann Arbor, as amended."

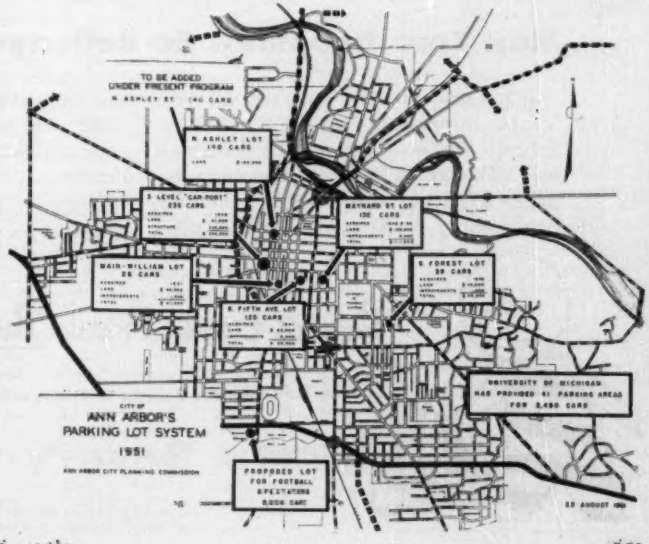
The first ordinance authorized revenue bonds in the amount of $330,000; the second $300,000; total, $630,000.

The very first step gave the system annual earnings of over $70,000. This was the installation of 675 Magee-Hale Park-O-Meters. These are collecting about $120 per year per meter—$71,459 last year. There are now six parking lots and the three-level garage known as the Car-Port. The map shows their relative location, and Mayor Brown says, "a municipality should buy the most convenient location with possibilities for expansion, and it's then a good investment." He warns, further, against arranging to pay off revenue bonds too quickly; 20 years is better than 10 years. Income must be sufficient to pay expenses. Fortunately, as matters have turned out, Ann Arbor's parking income can carry the load of $40,000 a year for retirement of bonds. Matters might not have so turned out. There are also the little matters of $15,000 interest on debt and $8,652 depreciation. Ann Arbor's operating profit is $80,000 a year. Revenues and expenses for the meters, the Car-Port garage, and the three revenue lots operating through 1951 are given in the table.

Twenty-four per cent of Ann Arbor's tax income is from a radius of three blocks from the four corners of Main and Washington Streets. The Car-Port is within this area. Since its construction, Goodyear has completely remodeled their department store, Kresge has doubled in size, Woolworth has erected new brick buildings. Assessed valuations in the district have been upped heavily—and," says Mayor Brown, "in dozens of other locations assessments have been increased."

City of Ann Arbor Parking System
Income Statement
Year Ended June 30, 1951

Revenues		
Parking fees		$103,551.58
Rent		2,652.00
Refunds		156.16
Totals		$108,360.74
Expenses		
Salaries		$ 29,632.17
Wages		4,879.70
Tickets and office		511.03
Telephone		151.39
Repairs		1,978.65
Motor equipment operation		406.82
Fuels, light and water		2,296.21
Materials and supplies		1,148.70
Insurance		559.06
Retirement Fund		1,691.00
Miscellaneous		975.19
Proration of administration		
Totals		$ 45,309.17
Operating Income		$ 73,451.62
Other Income		
Interest on investments - net		1,448.00
Total		$ 80,076.62
Other Deductions		
Interest on debt	$15,175.00	
Depreciation	8,652.41	24,827.41
Net Income		$ 55,949.21
Appropriation of net income		
Debt retirement		$ 40,000.00
Purchase of equipment		2,595.75
Surplus		13,353.46
Total		$ 55,949.21



Season's GREETINGS

May Your Happiness Be Reflected All Year 'Round!

Happiness can be reflected all year 'round through the use of Prismo reflective traffic markings. Whether it be: reflective "Life-Line" striping; Reflecto-Kit road sign marking material, brush, spray or silk screen method; plastix, long-lasting reflective plastic crosswalk and pavement markings. Make your highways safe next year by using Prismo . . . the finest highway reflective traffic paint in all the world. Durability proven by over *12 years test.*

"Nothing Equals Prismo But Prismo"

. . . Write for informative bulletins on Prismo reflective traffic paint.

The SPHERE of SAFETY

PRISMO SAFETY CORPORATION

HUNTINGDON, PENNA.

Transit vs. Congestion

In the Medium-Sized City

By C. A. HARRELL *
City Manager
Norfolk, Va.

THE most important problems of a city government deal with the efforts of its citizens to make a living. A city's first responsibility to its inhabitants is to facilitate their honest economic life.

On the surface this may seem a startling statement, but a close examination of city life would reveal its truth. Problems of safeguarding health and public safety, providing educational, recreational, and cultural facilities, and improving living conditions in general can be solved if citizens are willing and able to pay the cost of these services. Obviously, if a citizen cannot make a living he will be unable to assume his portion of the burden of providing the many services offered by the modern, wide-awake city. Nor will he be able to obtain the private necessities and luxuries characteristic of twentieth-century urban life.

Today's urban breadwinner would be completely stymied without adequate transportation. Adequate transportation facilities have become essential to every person and to every enterprise. Over the years this has become increasingly true, until today the very economic existence of any city depends upon the ability of its transportation facilities to move people and commodities smoothly and efficiently. Adequate facilities for all forms of transportation are essential to a city's growth, welfare, and prosperity.

Control

Stagnant traffic conditions on the streets and highways can paralyze a city economically. Uncontrolled decentralization, more and more evident, can be traced directly to the phenomenal rise in private-automobile ownership. The automobile has contributed greatly to the possibility for suburban living. The decentralization trend is also increasing mass-transit problems. To serve satellite shopping centers and sprawling suburbs, transit lines are duplicated in many instances and must often operate over long distances in sparsely settled areas with a consequent low revenue return.

Modern industry, commercial houses, and distribution centers now depend on adequate streets and highways to a great extent, and their business can be crippled by poor circulation of vehicular traffic.

Net results of traffic congestion can be a very real problem to any city. Merchant and real-estate taxes will be reduced. Transit facilities operated without a reasonable profit because of traffic congestion are unable to pay the city for the use of its streets, as well as other taxes. Equally serious is the threat that industrial and commercial houses and distribution centers will leave and locate in other cities to avoid the costs of traffic congestion.

Traffic and Parking

Volumes as high as 50,000 vehicles a day are not uncommon on important arteries and streets of the medium-sized community. Few of our largest cities carry volumes any higher than this except on a few streets.

When traffic volumes on an ordinary street reach this point, it is certainly time to think about building expressways. But the medium-sized city may be unable to finance the building of expressways designed to carry large volumes of traffic. Land costs in expressway areas are often prohibitive, and the high cost of construction might mean that other services would have to be curtailed. As an example, 29 miles of the Los Angeles Arroyo Seco Parkway cost $70,000,000, and four miles of Houston's Freeway cost $7,000,000. Such heavy expenditures in a medium-sized city will force its officials to seek various expedients and outside aid.

The provision of off-street parking facilities ample to permit the prohibition of curb parking in the downtown area is an inexpensive way of widening streets without actually moving the curbs. This plan avoids the heavy costs of construction and of acquiring expensive additional right-of-way in the heart of the central business district.

Ample off-street parking space can be provided by (1) zoning regulations that require new commercial and industrial structures to incorporate off-street parking space, and (2) municipally owned or regulated off-street parking lots.

In Norfolk, a 1950 zoning ordinance requires new commercial structures to provide off-street parking and loading facilities. And Norfolk is currently considering a plan for the city to purchase and operate five downtown lots. Through parking meters these lots would be self-sustaining. The cost of purchasing the land and installing the meters would be paid with 20-year revenue bonds. When the plan went into operation, curb parking would be prohibited on many downtown streets. This plan, however, was defeated in a public referendum last June.

Fast, efficient, low-cost mass transit service may be the answer to traffic problems in the medium-sized city. This is obviously true in the larger cities where the preponderance of people are carried by mass transit. The medium-sized city should develop such an efficient transit service that citizens will find it more convenient to leave their personal automobiles behind and take a bus to the central business district.

While cost estimates for traffic improvements in the medium-sized city may make its officials want to throw in the sponge, traffic as well as other improvements must be measured not only in terms of what they cost but in terms also of the over-all benefit produced. A traffic-improvement program may well pay for itself over a period of years by controlling decentralization, preserving the tax structure, and enabling the city government to function more efficiently. For example, Norfolk spent $10,000 for a traffic signal at a single intersection. When criticism arose over this expenditure, it was pointed out that this one traffic signal relieved five traffic officers for duty elsewhere. Assuming that the traffic officers earned $200 a month, it would mean that in ten months the traffic signal, which was considerably more efficient than the traffic officers, would pay for itself. The point of basing improvements on benefits derived, as well as on costs, must constantly be kept in proper focus.

The Decision

Smooth traffic circulation will be more and more a problem of medium-sized cities. Those cities that face the problem squarely by making surveys, studies, and plans, and then appropriate the necessary funds, will, in spite of immediate capital costs, grow and prosper while their less responsive colleagues wither at the hands of traffic congestion.

* This article is based on material which was presented previously by Mr. Harrell in *Traffic Quarterly*, published by The Eno Foundation for Highway Traffic Control.

THE ANNUAL INDEX

listing by subjects and by cities the articles and items published in *The American City* for the 12 issues for 1951 will be available without charge to subscribers for the magazine. Address requests to 470 Fourth Ave., New York 16, N. Y.

LET DUALS "PARK" YOUR SERVICE PROBLEMS, TOO!

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THE DUAL PARKING METER COMPANY

A subsidiary of The Union Metal Manufacturing Company

Canton 2, Ohio

Alexandria, Va., Hires All Its Municipal Automobiles

By WILLIAM J. GANSTER
Assistant to the City Manager
Alexandria, Va.

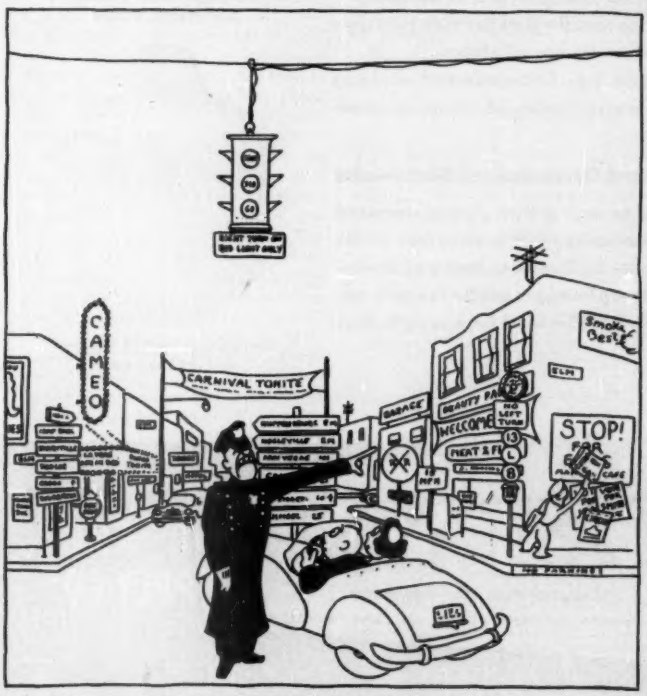
SINCE July 17, 1951, all passenger automobiles of the City of Alexandria, Va., are used on a rental basis established by a contract. The parties to the contract were W. Guy Ancell, City Manager, representing the City of Alexandria, and Harry Bendall, representing Capital Fleets, Inc., of Alexandria, of which he is president. Five bids were received on the rental plan—three from automobile dealers, and two from rental agencies. By far the lowest was Capital Fleets, Inc., and the cost is approximately $20,000 per year for the 30 cars. The repairs are handled by Bendall Pontiac of Alexandria. The cars are checked periodically for preventive maintenance, to assure us that we have cars in good operating condition at all times.

After several months of studying the feasibility of initiating a modern car-leasing plan for the city, specifications were drawn for sealed bids. Fourteen of the 30 cars bid on were for the Police Department, and the specifications were written in such a manner that they would be of a type larger and heavier than cars in the low-priced field. It was estimated that they would be driven approximately 30,000 to 40,000 miles per year, so they will be replaced by new automobiles every 12 months. The remaining 16 cars are used by other departments of the city (Health, Welfare, Recreation, etc.). Since they are not used as much as the Police Department cars, the specifications stated that they were to be cars of the low-priced field—Ford, Chevrolet, Plymouth, etc., and replaced every 36 months by new automobiles. We further stipulated in the specifications the maintenance requirements, insurance, service guarantee, and delivery of the cars. The only cost to us, other than the rental price, is for gasoline, oil, and liability and property insurance.

Checked Experience of Others

Since car-leasing is relatively new in the field of municipal government, we checked the experiences of private industry and came up with some interesting facts. It was found that 10 times as many businesses and industries in the United States lease cars today as did 10 years ago. Companies such as Westinghouse Electric Corporation, Radio Corporation of America, Goodrich Tire and Rubber Company, United States Steel — companies whose cost-accounting methods and business acumen are unexcelled, either in private enterprise or public management, found the leasing arrangement more economical than ownership. These companies found that the capital investment, maintenance, detailed bookkeeping, and time lost awaiting automobile repairs in the company shop were much more expensive and uncertain than the exact budgeting and 100% tax deduction as a business expense that goes with a leasing plan.

The Police Department, as well as the other departments of the city, are well pleased with the arrangement. Naturally, it is a boost to employee morale to operate new equipment, and it is also a relief to know that we can get peak performance from our equipment at all times, thus offering the maximum of service.



"No left turn, Mister. . . . Can't you read?"

Trolley Coaches Take Wilkes-Barre's Hills

FOUR times as many trolley coaches are operating in Wilkes-Barre, Pa., as in 1940—68 as compared with 17. Operation started in 1939 with 9 trolley coaches; these, together with the 59 since added, are all in service, each with at least a half million miles behind it. The ruggedness of the vehicle is proved not only by long life, but also by the hilly topography of the city. For instance, a two-mile line from Public Square starts at a 535-foot elevation, ends at 845 feet, and includes 12% grades.

Wilkes-Barre lies in the center of the anthracite-coal area. Luzerne County has almost half of the country's anthracite mines. Coal miners go to work early. So at 5. a.m., when most transit companies are still operating the owl runs, Wilkes-Barre Transit Company has a full fleet on the streets ready to transport passengers to the collieries that almost surround the city. As soon as the miners get to work, employees of the mills and dress factories take their places on the transit vehicles. They are followed by the downtown office and store employees. This combination provides a four-hour peak during the morning, and another during the afternoon.

Trolley-coach expansion in Wilkes-Barre is expected to continue. Overhead has been built to extend the Larksville Line. Conversion of an 8-mile run from the Public Square to the City of Nanticoke is in the news.

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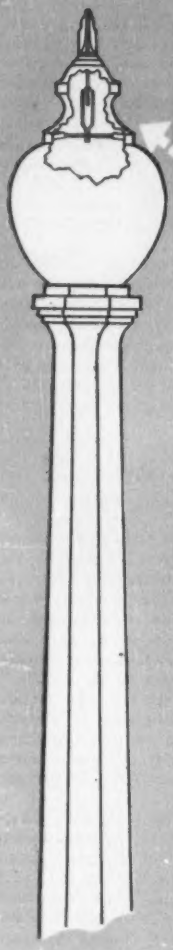
Catalog No. J95300

The JOSLYN Canopy Holder and Finial provides an ideal method for attaching glass canopies to Ornamental Glass Globes.



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The vertical rod permits adjustment for canopies of different heights.

The compression springs on horizontal rod provide for installation without special tools. Bracket fingers provide positive attachment to flange of globe.

Metal finial has felt-gasketed seating surface to insure tight fit when secured in position.

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Catalog Nos. J94266 Canopy And J95265 Globe

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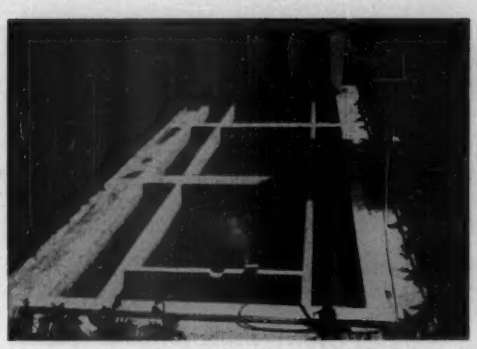

This is not a sunken garden, but an Imhoff tank in a beautiful setting at Portsmouth's sewage-plant grounds.

Superintendent Fields examines some of the flowers that make Portsmouth's sewage-treatment plant a garden spot.

Portsmouth's Beauty Spot—

Its sewage-treatment plant

By H. C. GROWDON
Director of Water and Sewage
Portsmouth, Ohio

IT MAY sound peculiar, but if one were to ask where Portsmouth's most beautiful flowers and landscaping are, the answer promptly would be—at our sewage-treatment plant; for here can be found more than 50 varieties of dahlias, three of cannas, as well as hollyhocks, sunflowers, gladioli, phlox, lilies, lilies-of-the-valley, iris, and probably a dozen other varieties of plants.

Our sewage-treatment works was not always this beautiful. It constitutes nothing more elaborate than a standard Imhoff-type treatment plant with prechlorination of the effluent sewage. This plant has a tributary population of approximately 3,000, treating an average of 125,000 gallons of sewage per day, the final effluent flowing into the Ohio River, one mile upstream from the intake of the Portsmouth Water Works. Its transformation into a spot of flowering beauty reflects the work of its operator, Arthur Fields.

Plant Unsightliness Disappears

Mr. Fields came to the department after one of the local steel works went out of business, and most of us believe that he now has found work that pleases him far more than did work in the steel mill. Before he came, neighbors complained of the unsightliness of the grounds and of the odors. Today they are proud to have Mr. Fields and his "garden" as a neighbor.

The sewage sludge is removed from the settling tanks by means of compressed air through ejectors on to three large open sludge beds where it is allowed to dry into a cake for removal from the filter bed. Mr. Fields makes liberal use of the sewage sludge for fertilizer, and also has been successful in disposing of much of the sludge to local greenhouse operators and farmers for fertilizer.

The plant now has a fish pond and a fountain. For the visitor, it has a maze of paths bordered with roses trained on lattice work. It also has the Russian sunflower — appropriately colored red. The offices of E. T. Beall, City Manager, as well as other city offices, are frequently decorated with flowers grown from these sewage-plant grounds. All in all, it is one of Portsmouth's most scenic spots.

Laboratory Instruments

UNLESS your water utility is unusually large, or has unusually difficult problems, the instruments listed below should meet your laboratory requirements. The list was compiled by S. K. Love, Chief of the Quality of Water Branch in the United States Geological Survey at Washington, and presented before the American Water Works Association at Miami, Fla.

Type	*Use*	*Cost*	*Manufacturer*
Balance (constant load)	Weighing of matter under 200 gms	$900–1,000	Fisher Scientific Co.
Colorimeter	Determination of Fe, SiO_2, NH_3, NO_3, NO_2, PO_4	50– 200	Hellige, Inc. Klett Manufacturing Co. Spencer Lewis Bausch & Lomb
Conductance bridge	Amount of solids	150– 200	Arthur H. Thomas Industrial Instruments Co.
Filter photometer	Determination of alkalinity Fe, NO_2, NO_3, Cu,Pb,Mn, SiO_2,F, PO_4	150– 250	Leeds and Northrup Klett Manufacturing Co. Fisher Scientific Co. Photovolt Co.
Flame photometer	Determination of Na,K,Li,Ca, Mg	800–1,500	Central Scientific Co. Perkin-Elmer Corp. Beckman Instrument Co.
pH meter	Determination of water acidity and alkalinity	150– 250	Leeds and Northrup Photovolt Co. Coleman Instruments, Inc.
Radioactivity	Monitoring alpha, beta, and gamma rays	600–2,500	Tracerlab, Inc. Radiation Counter Labor't'ries
Residual chlorine	Determination of either free or combined chlorine residual	225	Wallace & Tiernan Beckman Instrument Co.
Spectrophotometer	Determination of essentially all colorometric readings	700–1,200	Coleman Instruments, Inc. Central Scientific Co.
Turbidimeter	Determination of turbidity, SO_4	50– 150	Hellige, Inc.

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Speed in loading and adaptability in taking any type of refuse plus high compaction and low operating costs — These things add up to greater savings.

Here's where the savings start . . . Automatic continuous loading and packing . . . Crushes boxes and crates . . . Its low loading height eliminates back strain and other occupational hazards . . . It works on a low operating oil pressure thus cutting down wear and tear on the engine.

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In most cases, the hot-mix surfacing is laid by a machine and then rolled. In Battle Creek, Mich., the surfacing is placed with the assistance of a Barber-Greene paver and Galion roller.

SOME ELEMENTS OF

Street Construction and Maintenance

Part IV—Asphalt Surfacing

By WILLIAM S. FOSTER
Engineering Editor
The American City

THE ASPHALT SURFACING is the public-relations department of the street system. It properly should cover a base course strong enough to carry the traffic load, and will act as a smooth, pleasing buffer between the base course and the motorist.

Of course, the asphalt surfacing, being tough, will protect the base course from the abrasive action of the traffic; and, being relatively impervious to water, will prevent the base from being softened by intruding moisture. But fundamentally, the asphalt must take a rough, unattractive base that is yet strong enough to carry its vehicular load, and transform it into a smooth, luxuriously attractive surfacing that gives confidence to the motorist.

Like any public-relations department, however, if the organization back of it is not strong, then the program fails. Similarly, if the base is not strong, the best-laid asphalt surfacing will disintegrate.

Oldest Asphalt Street

The oldest asphalt street surfacing still in use apparently is in Fort Wayne, Ind. This is on Court Street from Berry to Main, and was built in 1900. Kansas City paved a portion of Highland Street in 1888, and Washington, D. C., laid a portion in 1876.

Most asphalt surfacing placed by cities today comes under a maintenance program. In many cases, the surfacing is placed by the inverted penetration method; this means that a traveling distributor sprays a cutback asphalt or an asphalt emulsion on the surface, and then follows this with a layer of gravel or stone. However, many cities prefer a hot mix from a central plant, laid and rolled, feeling that this gives better compaction and service.

While many cities buy the asphalt mix from commercial plants, many others, particularly the larger cities, own and operate asphalt plants. Even certain small cities have made this investment. Crown Point, Ind., for example, with a population of 5,000, finds a hot-mix asphalt plant a good investment. The city uses a Barber-Greene Model 830-40. The City Engineer has placed the cost of surfacing at $6.50 per ton, or half the cost that he formerly had to pay.[1]

La Mar, Colo., also has its own Barber-Greene asphalt plant. George Russell, City Engineer, laid 200 blocks of surfacing in 1949, using a city-owned Adnun paver.[2]

Fergus Falls, Minn. (population 10,000), is another city that has found the use of a central hot-mix asphalt plant profitable. The cost per ton in place of asphalt mix is $4.80, according to Egal Wefald, City Engineer, or about half the contract cost for the mix when shipped in.[3]

When laying sheet asphalt, one frequently places a binder course about 1½ inches thick and covers it with a wearing surface of finer material about ¾-inch thick. These are prepared in a hot-mix asphalt plant.

Mixes for the various asphalt surfacings have been developed to a thorough degree by the Asphalt Institute, and are outlined in booklets that the Institute distributes. Occasionally, some city will revise these specifications for its particular needs. Cincinnati, for example, found that the fine sand required by standard specifications for sheet asphalt ran the cost excessively high. The sand had to be shipped in and cost $4.55 per ton. By adjusting the specifications so that the coarser natural sand could be used, the city took advantage of a product costing only $2.94 per ton. The specification of the sheet asphalt with coarse sand is as follows:

sand	85%	
dust	7%	
asphalt	8%	(70-80 pen)

The sand-sieve analysis is as follows:

	Percent Passing
⅜ inch	100
No. 4	95-100
" 8	70-95
" 16	45-80
" 30	25-40
" 50	10-30
" 100	1-10

Results

This mix does a good job where sheet-asphalt patches are placed on deteriorated concrete streets to a depth not over 1 inch.

The work was done by C. E. Brokaw, Superintendent of Highway Maintenance for the city.[4]

Probably the biggest day's work on record for asphalt paving in any city occurred in Baltimore. In the fall of 1949, the city paved 14 blocks in the downtown area on a Sunday. The work

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"YOU NAME THE JOB and a LULL SHOVELOADER can do it!" say amazed operators everywhere. It is the ideal equipment for Winter or Summer operations—rips pavements, digs hard materials, lifts and loads, scrapes and fills, as well as bulldozes. The LULL SHOVELOADER is the most powerful front end tractor loader available. In addition, the long reach bucket permits rear loading of trucks . . . lets traffic proceed at normal flow. Fast power hydraulic action plus close-in maneuverability makes the LULL SHOVELOADER efficient anywhere . . . anytime.

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covered 25,000 square yards and included a 1-inch binder and a 1-inch sheet-asphalt wearing surface. The work started at 5:30 a.m. and ended at 9:30 p.m., with all work paid at double time. The previous week, 500 manholes and cross trolley tracks had been raised. The city called on the combined services of seven contractors, who used 83 trucks, 9 Barber-Greene spreaders, 2 rollers, and 236 laborers, not including supervisors, equipment operators, and truck drivers. The work was under the direction of W. L. Chilcote, Deputy Highway Engineer, and G. V. Walter, Supervisor of Bituminous Construction.[5]

Street-Asphalt Patching

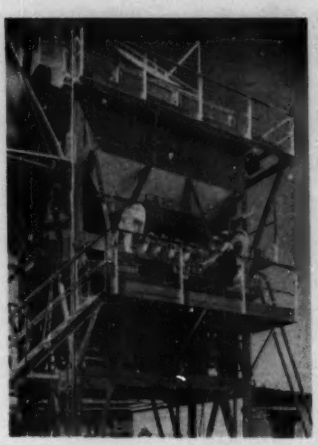
Fort Wayne, Ind., uses a hot-mix asphaltic-cement concrete with a fine-graded aggregate to patch old sheet asphalt and to repair and resurface old sidewalk. This city also uses this mix to form a 1-inch wearing surface on bituminous pavement. The mix specified calls for a blend of agricultural limestone and concrete sand. The finished mix has this over-all specification:

Passing	*Retained*	*Percent*
⅜ inch	No. 10	10-25
No. 10	" 40	40-48
" 40	" 80	13-20
" 80	" 200	4½-11
" 200	" 200	6-11
Asphalt cement		8-9

This is mixed in an ordinary hot-mix plant using well-dried aggregate heated to 300° F.

When patching sidewalks, No. 3 fuel oil is added to the mix at the rate of 1 pound per 67 pounds of asphalt cement. There is no need of a tack coat. The mix is put in place with a hot smoothing iron, and jointed with a standard sidewalk jointer. This same mix has been used to repair concrete curbs. W. F. Droege, City Chemist, developed the mix.[6]

During the war years, city streets faced what was politely called "deferred maintenance," which more accurately might be termed "neglect." Following the war, cities faced a great street maintenance or rebuilding program to bring those streets back into shape again. The St. Louis program is typical, in that it showed the lengths that cities had to go to repair breakdowns in the base caused by deferred maintenance.



Many cities use hot-mix asphalt prepared in their own plants. Here a Standard Steel Corporation plant is used for this purpose in Los Angeles.

St. Louis patches its asphalt streets by making a definite hole with the sides cut to a vertical wall. This is painted with a light cut-back asphalt or AE-7 emulsion. Asphalt concrete is then placed in the hole in layers of 1 inch and tamped.

If the pavement is depressed, but sound, a feather-edge patch is used. The area is primed with cutback or emulsion, and asphaltic concrete, then is carefully raked to fit the contour. After rolling, the edges are painted lightly. The patch and the pavement soon blend.

When resurfacing with asphaltic concrete, the city uses a 1,000-ton plant to furnish the mix. The mix is spread in a single layer 1½ inches thick. After the initial rolling, and before final densification, a light application of sand is applied at the rate of 6 pounds per square yard and broomed for appearance and to make the surface non-skid. Old brick pavements are surfaced similarly.[7]

Detroit also prepared a careful program fitted to streets in all phases of war-induced neglect. If the asphalt street was in bad shape, the first step was to patch all holes and fill wide cracks with a sheet-asphalt mixture, or a fine-graded asphalt cement mixture, well compacted. The next step was to level all irregular areas, using a binder course of varying thickness. Detroit engineers do not recommend using SC grades of asphalt in the patching work because it has a tendency to flux and soften the resurface mixture. They recommend using MC grades when using cutback asphalt for repairs and then allowing several weeks before resurfacing.

Inverted Penetration Method

On those streets where there is little sign of base failure, Detroit will use a light, surface treatment by the inverted penetration method. The asphalt is applied by pressure distributor at the rate of 0.25 gallon per square yard. The asphalt is 120-150 penetration, heated to 375° F. This will be covered immediately with 20 to 25 pounds per square yard of warm concrete sand previously dried and coated with MC-2 at 5% by weight. The sand has been heated to 200-230° F.; the MC-2 has been heated to 130° F., and the two mixed in a hot-mix plant.

With the sand in place, the street is opened to traffic immediately so that the sand can be kneaded into the asphalt. If there is not sufficient traffic, the sand is rolled with a pneumatic

Under certain conditions, small cities also use their own asphalt plants. This is a Barber-Greene unit being set up for street paving work in Fergus Falls, Minnesota.

Seal coats are placed by means of a pressure distributor. In this picture a spreader is shown covering the bituminous material immediately with aggregate.

How's this for Dependability

This picture was taken in Chardon, Ohio, November 1950, and Chief of Police John R. Bohl reports that 110 of their MI-CO Parking Meters were covered completely. "At the time that the snow was removed," writes Chief Bohl, "the temperature was 13 degrees below zero. However, we did not find a single meter out of order; they worked perfectly when coins were inserted in the coin slot. Neither did we experience any difficulty in opening the coin collection door."

Cold or hot—wet or dry—sleet, snow or ice—make little difference to MI-CO's because they are designed to keep operating in all sorts of weather. You'll find, too, that irrespective of weather conditions, MI-CO Meters are consistently high producers the year round, and not for just a year or two, but up to ten years and more.

Low maintenance assures top earnings, and MI-CO Meters are well known for their exceedingly low upkeep expense. One reason for this is the reduction to a minimum of moving parts. In some models there are only six. And the meter is so simple that should a service call be necessary, the adjustment is usually made in a few minutes right at the meter location—a feature which keeps the meters available for operation virtually all of their parking hours.

We would like to tell you more about MI-CO Meters, and send you records of upkeep costs and earnings of installations all over the country—many of them ten years old and more. A study of these reports will, we believe, convince you that MI-CO Parking Meters are your best buy.

MI-CO METERS, 231 Court St., Covington, Ky.

Division of The Michaels Art Bronze Co., Inc.

This street suffers only because its surface has deteriorated. Its base still can carry its heavy traffic load.

A good asphalt surface gives confidence to the motorist, and gives added attraction to the area which it serves.

roller. More coated sand is then applied until no more can be absorbed.

A high-viscosity, quick-breaking emulsion, such as AE-3B, can be used successfully in place of a cutback. Detroit specifies ⅓ gallon per square yard at 140° F. On heavily traveled streets, a hot ⅜-inch stone can be used for sand.

Where the pavement shows a fairly good base and a smooth contour, Detroit likes a thin plant mix. This is applied by first using a tack coat of asphalt emulsion, AE-3B, 60% bitumen, heated to 150° F. spread at the rate of 0.25 gallon per square yard. On this is placed a hot sheet-asphalt mix containing 10.3 to 10.5% asphalt of 85-100 penetration and 10% 200 mesh-filler. This is spread at the rate of 60 pounds per square yard, and rolled.

On streets requiring more extensive work, such as those with abandoned railroad tracks that need covering, the Detroit practice calls for the use of a fine-graded binder. A bond or tack coat is applied similar to that used for the thin plant mix, and then a 1-inch fine-binder mix is placed by machine and rolled. The mix uses a ½-inch maximum-size aggregate instead of the 1¼ inch customarily used. The mix meets these specifications:

Passing ½ inch, retained No. 10	75%
Passing No. 10 (sand) retained	20%
Asphalt cement, 60-70 penetration	5%

In areas of heavy wear, such as bus stops, heavier treatment is needed. Detroit practice calls for stripping the old pavement for 50 feet along the curb and to a 10-foot width. This is replaced with regular binder mixture, coarse-graded from ½ to 1¼ inch with the first layer 1½ inches thick compressed. This is allowed to cool after rolling and then covered by a second layer, also 1½ inches thick compressed, and finally topped with a wearing surface ½ inch thick, meeting this grading:

Crushed stone passing ½ inch, retained ¼ inch	65%
Sand (asphalt grading) passing No. 6 screen	25%
Mineral filler	5%
Asphalt cement (60-70) penetration	5%

The surface voids are closed with two light applications of coal-tar pitch (Jennite), applied at the rate of 0.1 gallon per square yard.[8]

Wichita, Kans., resurfaces old asphalt streets once every two years. The street is first swept clean, chuck holes are filled with a cold-mix patch, the surface covered with RC-3 cutback applied at the rate of 0.25 gallon per square yard with a city-owned Standard Steel distributor. Rock chips are then applied by a Good Roads spreader at the rate of 25 pounds per square yard. This is rolled and then broomed with an Elgin street sweeper.[9]

Uneven corrugations occur in asphalt streets and can be removed by a heater-planer. Charles E. Brokaw, Superintendent of Highway Maintenance, Cincinnati, has found that the Spearwell heater-planer can operate successfully at a rate of 30 to 60 feet per minute and plane a strip 50 inches wide in one pass, to cut a maximum of ½ inch.[10]

When resurfacing operations take place, often it is necessary to raise manhole covers. To eliminate this annoying expense, Kansas City has been experimenting with a manhole adapter that fits over the manhole to raise the rim so that the wearing surface can be applied without raising the manhole. It is a product of the A. Reed Wilson Company of the same city. It raises the manhole 2½ inches. The original cover fits inside the ring.[11]

If the surface develops irregularities, a heater-planer can take them out. Here a Universal Road Planer is seen in operation on a street in Detroit.

Rubber Streets

Rubber mixed with asphalt is showing some promise as a method of prolonging the life of asphalt. Early experiments in this country have taken place in Akron, Ohio, where 1,200 pounds of powdered rubber were mixed with 3,000 gallons of asphalt in a hot-mix plant. The rubber blended at a temperature of 300° F. Rubber has been used for this purpose in England and Holland with good results.[12]

New York City also is experimenting with rubber-asphalt on five test stretches of streets that will be subjected to heavy traffic amounting to 60,000 cars per day. Fifteen hundred square yards are covered by the test, all located on the West Side highway. One stretch will use natural rubber; three will use synthetic and processed rubber, and a fifth will be laid with asphalt.[13]

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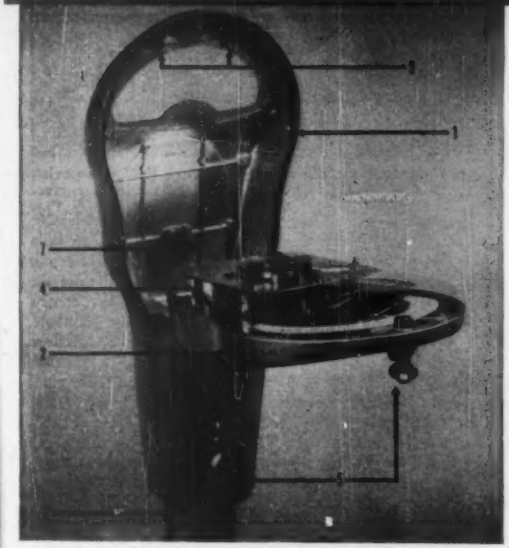
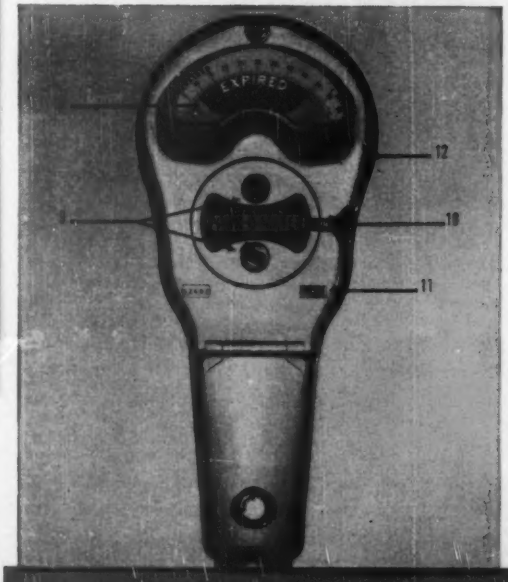
THE INSIDE STORY OF PARK-O-METER





The completely automatic . . . weather-proof . . . theft-proof . . . tamper-proof . . . convertible Park-O-Meter is the most attractive in exterior appearance, *but the Big Story is inside the case* . . . read it!

1. WEATHER-TIGHT gasket made from Neoprene absolutely seals mechanism chamber against moisture and dust.
2. WORK-TABLE DOOR for mechanism chamber is solidly hinged at bottom to facilitate on-the-spot adjustments, conversions, repairs or service.
3. REPLACEABLE GLASS. All heavy plate glass mounted for quick removal simply by loosening screws.
4. THEFT-PROOF. Hinge-pin is securely fixed by set screw accessible only from inside chamber. A pin, cast integrally with case, guards against jimmying or lock-picking through coin compartment door.
5. LOCKS. Separate locks of different types close coin compartment and mechanism doors. Operated with separate keys.
6. NON-REMOVABLE HEAD. Meter head cannot be removed from post except through coin compartment door.
7. SELF-SEALING winding aperture. Crank opening is fitted with performed synthetic rubber seal to exclude snow, rain, dust. Easily replaced.
8. HIGH VISIBILITY. Expired flag can be seen from either side at 50 yards. Makes for easy enforcement.
9. VISUAL TROUBLE SIGNAL shows a red line through coin windows when meter has been jammed, or "slugged," and becomes inoperative.
10. COIN-SLOT marked with red arrow. Coin-gate lock prevents inserting coin in a jammed meter.
11. REVENUE REGISTER shows cumulative total in dollars and cents.
12. STREAMLINED HOUSING eliminates all snow shelves and provides constant and extreme visibility of time signal and Expired signal. Enforcement is made easy and economical.

ASK FOR BROCHURE

Describing Park-O-Meter's Exclusive Fix-Fast Unit Construction which permits Thumb-and-Finger disassembly for on-the-spot service and repair.

Magee-Hale PARK-O-METER COMPANY

COMMERCE EXCHANGE BUILDING • OKLAHOMA CITY 2, OKLAHOMA

Commission on Ethics In Government Proposed

UNDER THE CHAIRMANSHIP of Senator Paul H. Douglas, of Illinois, a report on "Ethical Standards of Government" has been prepared and issued by a special subcommittee of the U. S. Senate Committee on Labor and Public Welfare.

The report recommends that:

A Commission on Ethics in Government should be established by joint resolution of Congress. The Commission's function should be twofold, the first to investigate and report to the President and to the Congress on the moral standards of official conduct of officers and employees of the United States; the effect thereon of the moral standards in business and political activity of persons and groups doing business with the Government or seeking to influence public policy and administration; and the moral standards generally prevailing in society which condition the conduct of public affairs or which affect the strength and unity of the Nation. The Commission's inquiry should focus primarily on the legislative and executive branches, but should not exclude the administration of justice, federally supported activities of the states, and such ideas, attitudes, habits, practices, and standards of American society as are relevant to the Commission's functions.

The second function of the Commission should be to recommend measures to improve and maintain at a high level moral standards of official conduct in the Federal Government and of all persons who participate in or are responsible for the conduct of public affairs. It should be noted that the Commission would not be concerned with the morals of individuals—governmental personnel or private citizens—except as they are involved in the conduct of public affairs.

Among other recommendations set forth in the report are the creation of a citizens' organization to work for better government on the national level. "The successes of many reforms in local and national government stem from the activity of well-organized citizens' groups," says the Douglas Committee. "To win public understanding of the recommendations of a Commission on Ethics and to serve as an effective watchdog over the administration of approved measures, such a national organization can be a most effective force."

By-Passed Cities Register Higher Business Income

REROUTING highways to skirt cities' business districts is bringing new money to merchants along the by-passed sections of the roads.

This is the conclusion of a recent study by the California highway department, which examined the effect of turnpikes and throughways on business and land values in five by-passed California cities, the American Society of Planning Officials reports.

Typical of these by-passed cities is North Sacramento. There, 224 retail stores lined the four-mile main business street, which also served as a highway for cross-state traffic. In 1947, a freeway, by-passing this particular section of the road, was completed. Almost overnight, street congestion disappeared as traffic dropped 44%.

More important, at least in the eyes of North Sacramento merchants, however, was the jump in the volume of their business. In the two years following the opening of the by-pass, over-all volume of retail business in the stores along the former highway increased 48.5% compared to a county-wide increase of 27%.

Too, some 36 new businesses have opened up along the superseded stretch of highway, chiefly cafes, bars and service stations. As a result, real-estate values have risen steadily, the study showed.

In Auburn, Calif., whose main business street was formerly astride a heavily traveled transcontinental U. S. highway, a by-pass around the business district reduced traffic only 10 per cent. No longer discouraged by the congestion, residents of outlying areas not served by the highway began to trade in Auburn. The first year after the highway rerouting, parking meter receipts increased 2 per cent, while business in the 75 retail stores along the main stem increased 17 per cent despite a drop in the area's income from the fresh fruit industry—Auburn's chief source of economic existence. Business was up only 14 per cent state-wide in the same year—the state-wide average being used since, in recent years, Auburn retail business has more closely followed state-wide trends than those of the county.

Interns Serve Cities and States

INTERN-TRAINING programs are receiving increasing attention from state and city governments as a way to improve the quality of public servants.

The intern program at Pasadena, Calif., is for college seniors or graduate students who are interested in public-service careers—particularly in municipal government. Out of the top 12 students passing a competitive exam, four are selected each year to start work with the city during the school term, working 20 hours a week for 40 weeks. During this time, they are given actual work assignments in about 12 different city departments, learning about operations as well as contributing toward accomplishing city functions.

Other cities that employ interns are Kansas City, Mo.; San Francisco, Cincinnati, and Phoenix, as well as Westchester County, N. Y.

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Burns 100 hours

Releases Straight-line Pencil Beam of great intensity, visible from all angles, nearby and at really great distances. Exclusive fresnel globe and trip-lock release of chimney.

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DIETZ HIGHWAY TORCHES

Made better, to serve better. Non-tip base. Leak proof, and weather proof. Burn for 30 hours. Popularly priced and very economical, too.

R. E. DIETZ COMPANY
EST. SYRACUSE 1, N. Y. 1840

Portland, Ore., contractor reports:

Chas. T. Parker, of Parker-Schram Co., says: "On this 36" pipe line using Dresser Couplings, a foreman, crane operator, oiler and six-man crew were able to average 15 lengths per day, complete except for coating. This in spite of almost incessant heavy rains. Where ditch was available without obstruction, we were able to complete about five lengths per hour. We know of no better method of connecting lengths of pipe in a water line."

A Dresser-Coupled steel line delivers water cheaper

The cheapest way to deliver water to the place where it turns into revenue is with a Dresser-Coupled steel line—the line that cuts *installation* costs, *leakage* losses and *maintenance* costs.

As in the case of this Portland water main, construction of a Dresser-Coupled line keeps going despite adverse weather conditions. Because a wrench is the only tool needed to make joints, costly weather delays are minimized or eliminated. And, in good weather, this type of construction sets a pace no other method can equal. The line starts paying its way sooner.

Leakage losses are cut because Dresser Couplings stay "flexible-tight" for the life of the line. Controlled gasket pressure is provided by controlled bolt tightness around the joint.

Maintenance costs are reduced also. Dresser Couplings harmlessly absorb underground stresses; and modern glass-smooth pipe linings, undamaged in joining because there's no heat, assure sustained high carrying capacity.

From all standpoints, a Dresser-Coupled steel line gives you the ultimate in performance and economy. See your Dresser Sales Engineer or write our Bradford Office for literature.

BE SURE you get the best line at the best price. Put steel pipe and Dresser Couplings in your specifications.

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COUPLINGS

Dresser Manufacturing Division, 59 Fisher Ave., Bradford, Pa. (One of the Dresser Industries). Warehouses: 1121 Rothwell St., Houston, Texas; 101 S. Bayshore Highway, South San Francisco, California. Sales Offices: New York, Philadelphia, Chicago, Houston, South San Francisco. In Canada: 629 Adelaide Street, W., Toronto, Ontario.

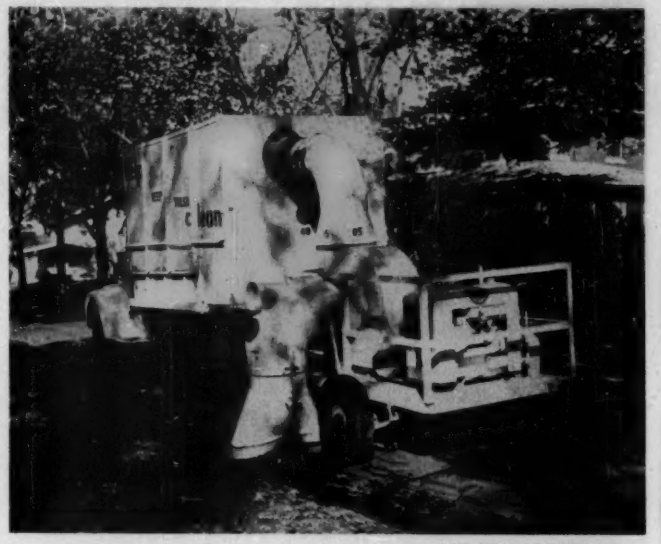
TWO Trucks
for every leaf collector

Tulsa, Okla., makes leaf-loading continuous, and collects from 120 to 200 cubic yards of compacted leaves per day

IN TULSA, Okla., two leaf loaders can keep four trucks with receiving bins busy. Each loader with its two trucks will average a total of four to seven loads per eight-hour day, depending on the wetness of the leaves. Each truck will hold 14.4 cubic yards of compacted leaves weighing 2½ tons. In an ordinary day, each loader will clean approximately 60½ curb blocks or 5½ curb miles.

These figures were presented by Wesley A. Beck, Superintendent of Streets, Tulsa, Okla., in a paper delivered before the American Public Works Association in its annual Congress held recently in Detroit. Street cleaning, including leaf collection, is a function of the Street Department in that city, he explained.

Tulsa uses two American Vacuum Leaf Loaders, products of the American Structural Steel and Tank Company of Detroit. The bodies for the trucks were made in the shops of the Street Department to fit a standard 1½-ton truck with hydraulic dump.



TULSA POLICE DEPARTMENT PHOTO

Note how the leaf collector can be detached from the body of the truck. Tulsa is able to clean 5½ curb miles on an average day with these collection trucks.

Labor Requirements

Last season the loaders started in September and continued to February, working an average of 72 days and requiring a labor cost of $5,200. Each has a crew consisting of two drivers, one feeder, and one curb man. The driver pulls the collector while his truck is being filled and during this operation the previously loaded truck disposes of its load. The curb man goes ahead of the collector, sweeping the leaves away from the curb the width of a street broom. The feeder man sits on the machine with a street broom and agitates the leaves to give faster suction. He may get off and push the leaves to the suction spout.

Dry leaves not too dusty, are the easiest to collect. Leaves moistened either by a light rain or street flusher present no serious problem. But leaves saturated with moisture, that have been lying for some time in water, ice, or snow, require extra labor to pick them up. Also, these leaves clog up the fan blades, requiring cleanout delay. Often the crews pass them up, waiting for them to dry out a little so that they can be picked up later. A mechanical agitator placed in front of the suction spout could solve this problem, Mr. Beck stated. Dust, while a nuisance, is not too objectionable. Most residents are so pleased at seeing the leaves picked up that they voice no appreciable complaint.

Sometimes Hard to Unload

The packed mass of leaves is often difficult to unload, sometimes requiring pitchforks to help start the load out of the dump truck. Usually, a truck requires 45 minutes to dispose of its load and return to the blower. Often the leaves have street debris in them, such as tin cans, bottles, small pieces of brick and concrete, but these pass through the blower without damage.

In Tulsa, the Park Department uses the collectors intermittently during the winter. Leaves will be manually piled in long windrows to be picked up by the collector crew and transported to their grinder. This saves a great deal of time and labor, since the Park Department uses the pulverized leaves to mix with fertilizers and to mulch shrubbery.

Parking Problems

Car parking presents a problem, especially in the older residential sections which are rooming-house areas adjacent to the business district. However, this situation has been solved by placing "No Parking" signs on one side of the street about 4 a.m., and then switching the signs to the opposite side the next day. The public has respected these signs.

The city has made it a practice to give the leaves to anyone who asks for a full truckload and who is convenient to the leaf-gathering location. Commercial nurseries and gardens will take all the leaves the city will dump. The city has plans for a central dumping area where people can come and get any amount of leaves they wish.

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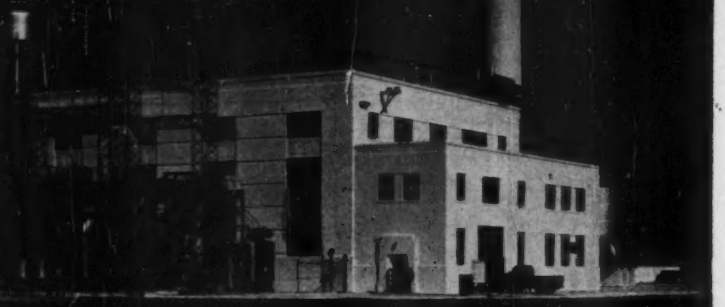

When you have an insulated piping problem, remember that only the best will give you ALL the advantages necessary to full-efficiency performance of your system. That means Ric-wiL Prefabricated Insulated Piping.

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Ric-wiL maintains a competent Piping Engineering staff for assistance to architects, engineers, and contractors in the planning of insulated piping systems and preparation of accurate, time-saving installation drawings.

Ric-wiL prefabricated straight sections and complete line of accessories provide fast, economical installation by eliminating the many inefficiencies of field fabrication of insulating and protective materials.

Peak operating performance is constantly insured in Ric-wiL systems by the fine material and workmanship used in producing Ric-wiL products. From the raw material stage through every phase of fabrication, skilled craftsmen build into Ric-wiL piping every known component for long, efficient operating life.

And remember this . . . only Ric-wiL provides *all* the features necessary to maximum protection, insulation, and high efficiency operation of underground or overhead insulated piping systems.

The Ric-wiL representative nearest you will be glad to give you full information on Ric-wiL as applied to your problem. If you prefer, write to Dept. 10-OA at Cleveland, Ohio, for full technical information.

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OVERHEAD

UNDERGROUND

FOR FORTY YEARS THE GREATEST NAME IN INSULATED PIPING SYSTEMS

How Danville, Ky., Financed a Shoe Factory

UNDER A 1948 act of the Kentucky Legislature, municipalities in that state have the right to erect buildings for manufacturing enterprises from the proceeds of tax-exempt revenue bonds which do not pledge the credit of the city.

Danville was the first municipality in the state to test this law, which has now been sustained by the State Court of Appeals.

Under this authorization the city sold $300,000 in bonds to cover the cost of a factory building for the General Shoe Company and the interest on the bonds up to the time when the industry started paying rent, which was September 1, 1951. The rent has been fixed at $1,460 monthly, which will retire all of the bonds with interest in 20 years.

When the bonds have been amortized, the building becomes the property of the city. Meanwhile, the General Shoe Company pays no taxes, but agrees to keep the building insured and in good repair for the city.

HENRY L. NICHOLS, *Mayor.*

EDITORIAL NOTE—The bulletin "From the State Capitals," by Bethune Jones (234 River Road, Red Bank, N. J.), dated October 25, 1951, reports that legislation authorizing municipalities to issue revenue bonds to finance construction of industrial buildings for lease to private industry was enacted this year in Alabama and Tennessee, following many years of operation of a similar statute in Mississippi.

Court Voids Two City Corporate Income Taxes

THE INCOME taxes levied on the net profits of corporations by the cities of Youngstown and Campbell, Ohio, were declared unconstitutional by the Sixth District Court of Appeals in Toledo November 19. Although the power of cities in Ohio to levy income taxes has been definitely established by the Ohio Supreme Court, the Youngstown and Campbell ordinances were voided on the grounds that the tax rate was not uniform and did not offer equal protection.

Youngstown had levied a 0.3% tax on individuals and a 1% tax on the net profits of corporations doing business there. Campbell had levied a 0.7% tax on corporation net profits and none on individuals.

National Housing Conference Elects New Officers

NEWLY elected chairman of the Board of the National Housing Conference, Inc., is Ira S. Robbins of New York City. Mr. Robbins, who is also executive vice-president of the New York Citizens Housing and Planning Council, was elected at a board meeting October 12 in Washington, to replace David L. Krooth, who had resigned.

Mr. Krooth, an attorney, and his partner, Norman S. Altman, withdrew from their respective posts as chairman and treasurer of the Conference, because their law firm is now active in bond-counsel work on local-housing-authority bond issues.

Miss Laurine A. Winlack was elected to the post of conference secretary to replace Mr. Robbins, and the Rev. Thomas M. Keehn, Washington representative of the Council for Social Action, was elected treasurer.

Mr. Robbins, the new board chairman, was formerly Acting Commissioner of the New York State Division of Housing, and is well known as a writer and attorney.

Dispersal Committee Organized for Bay Area

A NINE-COUNTY industrial-dispersal task force has been organized by the San Francisco Bay Area Council to aid in guiding the dispersal of new and expanding industrial facilities in the area. C. D. Lafferty, general industrial agent for the Southern Pacific Company, has been named chairman. Membership includes the representatives of the Area's chambers of commerce, boards of supervisors, government officials, industries, banks, utilities, railroads, planning commissions, labor, industrial realtors, civic organizations, universities, newspapers, and military organizations.

PORT OF OAKLAND REPORTS SUBSTANTIAL SAVINGS WITH BATTERY AD-X2*

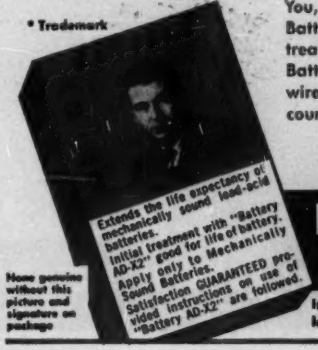
When the Port of Oakland checked 14 six-volt batteries (strap dated 1941) in its newly acquired Fire Boat, Dec. 1947, they found:

- 5 mechanically sound batteries, which were treated with Battery AD-X2.
- 9 unsound batteries, which were replaced with new ones.

Eighteen months later (April, 1949) a recheck showed the 5 treated batteries stronger than the 9 untreated new batteries. Now all Port of Oakland batteries are treated with Battery AD-X2 and worn out batteries replaced with Battery AD-X2 Re-Processed Batteries. Result, a substantial savings in battery costs, reports Donald H. Rolfe, Electrical Engineer for the Port of Oakland.

• Rollo A. Wells, Chief Engineer, checking main battery bank in Port of Oakland Fire Boat.

* Trademark


Extends the life expectancy of mechanically sound lead-acid batteries.
Initial treatment with "Battery AD-X2" good for life of battery.
Apply only to Mechanically Sound Batteries.
Satisfaction GUARANTEED provided instructions on use of "Battery AD-X2" are followed.

None genuine without this picture and signature on package

You, too, can make substantial savings with Battery AD-X2. Group 1 and 2 battery treatment, $3.00. Or use our Re-Processed Batteries. Money-back guarantee. Write, wire or phone for price list, quantity discounts and address of nearest distributor.

Still some territories, State and local, open to qualified operators.

PIONEERS, INC.

2411 GROVE ST. OAKLAND 12, CALIF.

In use continuously since 1947, keeping lead acid batteries stronger longer.

First

parking meters to be chosen first

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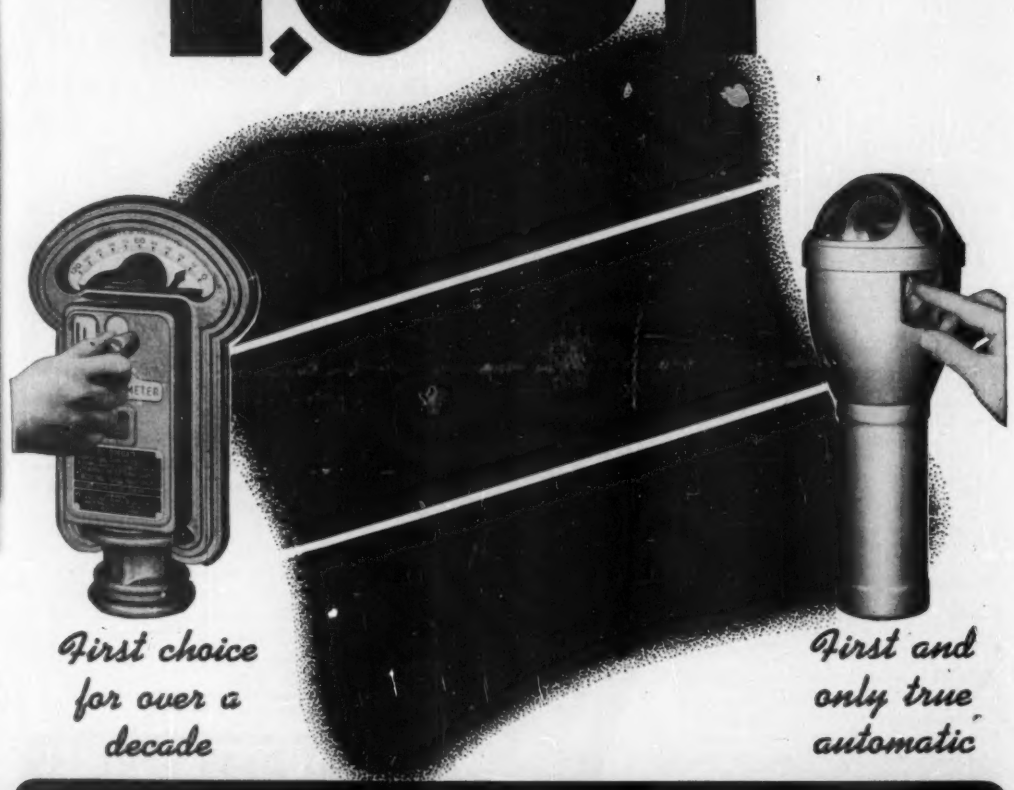


First choice for over a decade

First and only true automatic

835 NORTH WOOD ST. **DUNCAN PARKING METER CORP.** CHICAGO 22, ILL.

Manufacturers of AUTOMATON fully automatic and MILLER manual parking meters.

Municipal Public Relations

The City Tells Its Story

By HENRY DAVIS NADIG

Executive Director, Government Public Relations Association

Annual-report time again: progress is noted; some suggestions

AS NOTED in earlier columns, the annual municipal report should be conceived as a two-fold opportunity: (1) to tell the city's story as fully and clearly as possible at one stroke, and (2) to make the publication of the report the occasion for some special MPR work.

Steady improvement in the first of these is noted as the months go by—for annual reports come to us at all times throughout the year. Even the tiny city of Big Stone Gap, Va., whose little quarterly mimeographed reports were the subject of praiseworthy comment some columns ago, is developing its own report form.

However, Big Stone Gap may find, as time goes on, that too much extension of its present form will not do. One of these days that city will find it feasible to turn to a different form and style—even if the number of pages and content must be kept down for cost reasons. Reading audiences will decrease as the bulk of the mimeographed annual report increases and becomes less palatable.

Baltimore, San Diego, and Des Moines

The number of letter-size photographic reports is on the increase. These range sometimes up to more than 60 pages, such as with the 1949-1950 report from Baltimore. Baltimore uses color (yellow) sparingly in its thorough report. Pictures have much fine human interest and tell a good story. The text is written from the first-person-singular viewpoint, but the pronoun is little used.

San Diego, Calif., also uses letter size for its centennial annual report, which has a striking multi-colored front cover. Here, too, yellow is used along with black and white inside the book, but much more profusely than in the Baltimore annual. Attached in the center spread of this 36-page report is a smaller yellow and black booklet highlighting 100 years of San Diego history. There are more pictures in this book than in the Baltimore story, and smaller type-face is employed.

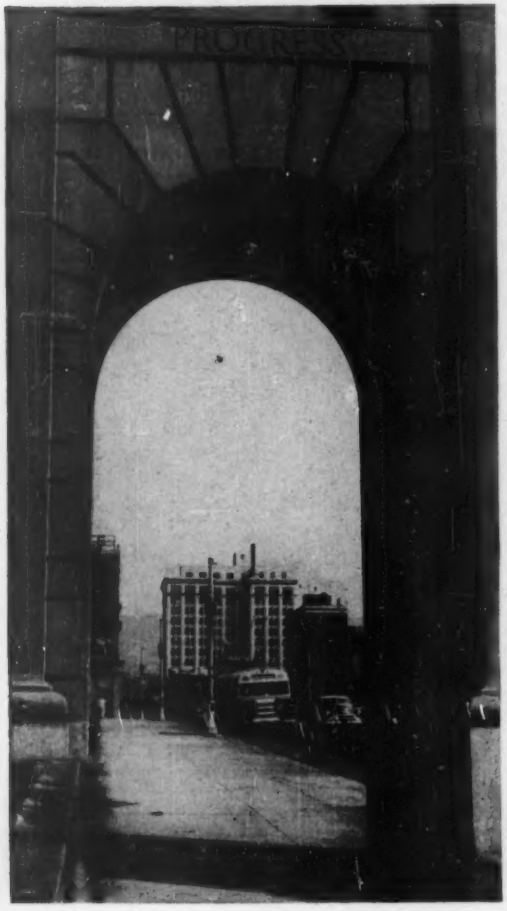
Both the Baltimore and San Diego reports are excellent jobs and are to be highly commended.

From Des Moines comes a 56-page, 5½"-by-8½" annual in black and white with red used for color relief. This is a neat little booklet at first glance, but it does not have the appeal or read-

THE RICHMOND NEWS LEADER
School Construction, Street Rebuilding Set Pace in City Improvement Program
ANNUAL REPORT
CITY OF BOULDER
1952 BUDGET REPORT
CITY OF LONG BEACH

Some recent municipal reports, including a two-page well-designed spread (left) from Cambridge, Mass.

Wilkes-Barre Trolley Coaches Bat 1.000



● "17 trolley coaches; 17 active."
"49 trolley coaches; 49 active."
"62 trolley coaches; 62 active."

Down through the years - since 1939 - that's the way the annual report has read on Wilkes-Barre Transit Company's trolley coaches. Altogether, 68 coaches have been bought for this Pennsylvania city, and **everyone of them is still active in the system!**

High speed schedules (up to 35 miles an hour) operated over the steep hills of the Appalachian Mountain region put a severe strain on transit equipment, but trolley coaches, with their smooth electric power, seem to thrive on it. They've been taking the hills of Wilkes-Barre for 12 years, and even the original coaches, with over half a million miles in service, look good for many more years.

Fourteen Wilkes-Barre motor bus and streetcar lines have been converted to trolley coach, eight of them since World War II. Every conversion has been followed by an increase in revenue, ranging from five to 12 per cent. Since the day the trolley coach arrived in Wilkes-Barre, it has never failed to earn a profit.

Overhead already has been built for an extension of one line. Conversion of an eight-mile line also is in the plans for the future. It's easy to see why trolley coach expansion continues in the Wyoming Valley city. The vehicle is profitable, it's popular. And on the score of long life and durability - well, you can't improve on this record . . . 68 coaches bought; 68 still active. Wilkes-Barre's trolley coaches are batting 1.000.

ability of the two reports discussed above. The use of red in the captions on photos is not conducive to easy reading in most instances, and the cuts themselves do not have the sharpness that one would like to see.

Clinton, Tenn., Pioneers

Going back to the smaller municipalities, an interesting item comes from Tennessee along with a copy of the Clinton, Tenn., annual report. There the alert owner-editor of the *Clinton Courier-News*, Horace V. Wells, Jr., has performed a fine public service in providing Clinton (population 3,713) with its first annual report.

So far as is known, it is the first report of general circulation ever prepared about the city. Its publication and distribution was handled and financed by Editor Wells. The report first was published serially in the *Courier-News*, intended to be "a story of present-day government in Clinton."

Editor Wells followed through with publication of the series in booklet form (40 pages plus cover) and illustrated it with photos of officials and of the municipal building and the planning commission's drawing of the recreation center, partly completed.

In his preface, Editor Wells says: "The idea behind the series of articles was to show that many volunteers have a hand in the operation of Clinton, and to explain where the money for the operation of the town comes from, and where it goes."

Here is an instance where the annual municipal report has accomplished a real MPR job—although achieved outside of the local government itself. As a part of the local paper, the report went home to the people—in parts, periodically. As a single post-serial booklet, it becomes a convenient reference document and story.

Small municipalities take notice: it can be done. And my correspondent writes that "now, because of the ingenuity and generosity of Editor Wells, Clinton citizens have the report and are likely to want and demand another for 1951-52, which the city might then undertake."

Anchorage, Alaska—Another First

Just received from Anchorage, Alaska (population 11,060), is that city's first annual report, an open-end illustrated booklet (40 pages) edited by Arthur H. Rosien, Administrative Assistant to City Manager Robert Sharp and a member of the Government Public Relations Association.

The report explains the function of each department, relates activities and accomplishments. Line drawings, photos, and charts add character to this report from Anchorage which, Manager Sharp says in his letter of transmittal, "is passing through a period of unprecedented growth."

In connection with annual reports, the Institute of Public Service, University of Connecticut, Storrs, Conn., will hold its annual judging in January of municipal reports from more than a hundred Connecticut municipalities.

This contest has been held for the past several years, and creates considerable attention not only in Connecticut and New England, but elsewhere in the country. Some fine examples of modern municipal reporting have been coming out of Connecticut. What will this year bring?

Pennsylvania State College is also setting up an annual-report contest. This was announced on October 13 and will be under the auspices of the Institute of Local Government there. This should encourage the production of improved printed material from municipalities throughout Pennsylvania. Other states may well follow this procedure to develop fuller use and appreciation of annual municipal reports.

Tips on Municipal Public Relations

PRACTICAL tips on local public-relations programs, summary of a survey on attitudes toward municipal governments by newspapers and radio stations in Tennessee matched with those of Tennessee municipal officials themselves, and a comprehensive article by Pan Dodd Wheeler, "Now is the Time—to Start MPR Activity," appear in the October 1951 issue of *Tennessee Town and City*, published by the Tennessee Municipal League. Copies may be obtained at 30 cents apiece from the League Office at 610-11 Cotton States Building, Nashville 3, Tenn.

Both Sides of the Housing Ledger

By JAMES FELT

EVERY so often some over-eager champions of private enterprise decry government activity in the real-estate field, particularly in housing. Such criticism is highly selective as a rule, focusing sharply on areas where it may be justified but ignoring other equally or more important government programs which have been of substantial benefit to real estate. Adding up both sides of the ledger hardly warrants the frequently repeated contention that "the government should get out of real estate."

Without "government in real estate" there would have been no Federal Housing Administration, no Federal Home Loan Bank, no Home Owners Loan Corporation, and no Federal Savings and Loan Insurance Corporation. These agencies, created between 1932 and 1934, marked the Federal Government's first entry into the real-estate field. Their purpose was to prop up a badly sagging economy and as such certainly constituted a proper function of democratic government. In terms of direct benefit to real estate, home owners, and the nation as a whole, they have more than justified themselves. Although of more recent creation, almost as much can be said for the Veterans Administration mortgage guaranty program, the activities of the Federal National Mortgage Association (Fanny May), and the extension of aid to urban communities for the purpose of slum clearance.

Public housing is the field of greatest ill-feeling and most heated debate. Even so, the blocks of vacant tenements forecast for New York at the start of the program in 1935 have failed to materialize. Despite a huge amount of public-housing construction, there are no tenement vacancies to speak of in New York City today. The municipal program of so-called "no-cash-subsidy housing" to help moderate-income families meet the post-war emergency may some day compete with private enterprise. It hasn't yet, but if it does the city should relinquish it promptly. This, incidentally, is a wholly municipal program in which neither federal nor state government have a part.

There are numerous details of all these programs which can be viewed critically and probably improved. There are even more numerous details of administrative practice and procedure that can be bettered substantially. Criticism, where justified, should be directed at these sore spots. It will be far more effective than sweeping broadsides which ignore the substantial benefits that have come to real estate from many of the government programs.

From the October 30, 1951, issue of the monthly bulletin of James Felt & Company, one of New York's leading real estate firms.

Whatever your service requirements

MODERNIZE with the WHITE 3000

Entirely New Kind of Truck saves time . . . reduces cost . . . does more work in municipal service

Reports from garbage and refuse collection departments in many cities: "The White 3000 is exactly engineered to our needs. It hauls twice as much load, covers twice the territory, requires two less men to load."

With packer-type body, open dump or with detachable bodies, the White 3000 is the modern truck for city service.

LOOK INTO THIS NEW KIND OF TRUCK for your municipal services. It's the most modern kind of truck for efficient, economical service . . . today . . . and for years to come.

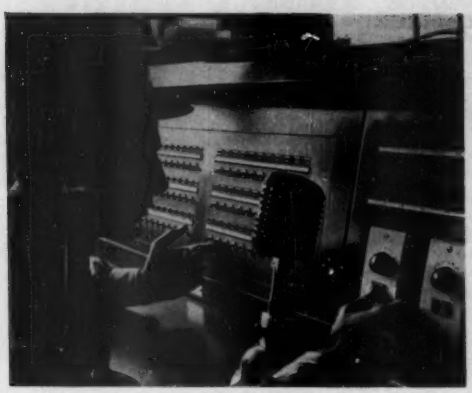
Its outstanding maneuverability saves driver time and driving time. It saves loading time . . . permits larger capacity bodies . . . longer routes. There's cab room for the collector and two helpers.

Find out from your White Representative how the White 3000 adds efficiency to your operations . . . adds economy.

THE WHITE MOTOR COMPANY · *Cleveland 1, Ohio*

For more than 50 years the greatest name in trucks

Tips its cab to service



Control operator, R. L. Craft receives fire report, turns on station lights, alerts men, opens the doors. Switching the traffic lights, he'll clear the way to the fire.

W. D. Ryers leaps for his boots and quick-hitch pants. Before going to sleep he makes a trial jump into his boots to make sure that they're in the proper spot.

Electric System Speeds Firemen in Columbia, S. C.

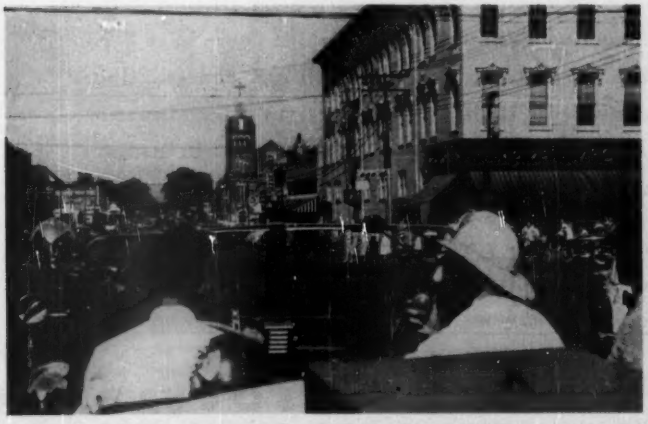
IN ABOUT the time it takes for a man to put on his shoes, firemen of the Columbia (S. C.) Fire Department jump from their beds into their boots and pants, slide down the pole, leap on the trucks, and are on their way. In one minute and nine seconds—what a man needs to put on his shirt and tie—apparatus has driven through daytime traffic and nine intersections to reach a fire a mile away. Columbia's fire station is fully equipped with the latest electric devices to eliminate delay.

Heart of the station's system is a remote-control wiring installation developed by General Electric engineers. With its help, a man sitting at a switchboard in the main fire house can turn on and off every light in the fire house, can open and close its eight fire apparatus doors, and control every one of the city's 88 traffic lights.

When the alarm of fire comes in, the switchboard operator alerts the men by loudspeakers, and turns the switch that opens the doors automatically. When an alarm comes at night, the control-room operator turns on all the lights in the firehouse, including the dormitory.

As the vehicles move through town, the radio man on the lead truck tells the control room what intersection they're approaching. The control operator turns the proper switch, starting a siren at that particular corner and turning the traffic light to flashing amber. Traffic comes to a stop, and the apparatus has a clear path. The last piece of apparatus through the intersection radios "cut." The siren stops and the traffic returns to normal.

With such traffic control, the apparatus can reach any part of the city from the main fire station in a maximum of five minutes, about a third of the time it would take under standard arrangements. Cost of the complete electric set-up was $24,900.



As trucks move through town, Captain A. H. Shull tells the control man in the main fire house what corner they're approaching. The siren screams and the traffic light changes to flashing amber. Last truck through will radio "cut."

Veteran Fire Chief Archie Marsh directs firemen with the aid of his driver, who uses walkie-talkie to relay orders.

What every highway engineer should know about the Maryland Test Road

Not a single structural crack developed in any of the 28 forty-foot concrete slabs built on non-pumping, granular subbase

The Maryland Test Road, 1.1 miles long on U. S. 301, was a two-lane concrete pavement of 9″–7″–9″ section. When it was built in 1941 pumping had not become a problem. Consequently most of the concrete pavement was placed directly on the natural fine-grained subgrade. However there was a non-pumping, granular subbase under 28 forty-foot slabs.

For nine years the pavement in this test section carried all normal traffic *plus* the heavy wartime traffic. Then for six months the pavement was subjected to accelerated truck traffic equivalent to at least 20 years of normal traffic on this road. Yet the 28 slabs on granular subbase carried 238,000 trips by trucks with single axle loads of 18,000 lb. in one section and 22,400 lb. in another section without any structural cracks. These slabs are in as good condition as when opened to traffic.

Since the Maryland Test Road was built a decade ago there have been many improvements in concrete pavement design and construction. With today's knowledge of soils, highway engineers can determine subgrade bearing values and any tendency of soils to pump. A thin insulating layer of granular material, where needed, will prevent pumping.

Thus the engineer can design a concrete pavement that will give unexcelled service under an unlimited number of legal axle loads and render this service at ***lower annual cost*** *than any other pavement.*

PORTLAND CEMENT ASSOCIATION

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A national organization to improve and extend the uses of portland cement and concrete through scientific research and engineering field work

Some Local Election Highlights

SWEEPING blows for civic reform recorded by the voters in New York, Boston, and Philadelphia outranked in importance other November 6 local-election results. Unmistakably evident was the desire of voters in these large cities to "clean house" and make fresh, vigorous, and determined efforts to tackle energetically the many major problems confronting American cities today. The citizens' revulsion against findings of crime and local political corruption was a primary factor in the shake-ups of the elections.

Encouraging also was the fact that many incumbents were re-elected in cities where officials had carried through effective public-improvement programs, administered in an honest, effective manner, counseled with citizens' groups about local issues and needs, and consistently endeavored to get the city's story across to the resident and taxpayer.

* * *

In New York, Rudolph Halley, former chief counsel of the Senate Crime Investigating Committee, was elected President of the City Council by a plurality of 163,492, despite the opposition of both major political parties and extremist groups. Mr. Halley ran as the candidate of the Liberal, Independent, and City Fusion parties.

* * *

The New Boston Committee, a nonpartisan good-government organization, headed by 24-year-old Jerome L. Rappaport, won a majority of posts in both the City Council and School Committee in the city's first election under a new charter. Five of the candidates endorsed by the Committee were elected to Boston's new, nine-member City Council, now elected at large, and four of the five School Committee members. Mayor John B. Hynes was put back into office for a second time, defeating Mayor James M. Curley by 77,389 votes.

* * *

In Philadelphia, which recently adopted a new home-rule charter to become effective in January, with a strong mayor-managing director form of government, Joseph S. Clark, Jr., defeated the Rev. Dr. Daniel A. Poling, 442,133 to 319,923, to become the first Democratic mayor of the city elected since 1884. Mayor-elect Clark and his running mate, Richardson Dilworth, who was elected district attorney, campaigned on a program of eliminating local corruption and revitalizing the city's administration.

* * *

Consolidation of city-county functions received new impetus when a constitutional amendment was passed by a 3-to-1 majority permitting the city and county of Philadelphia to be merged as one governmental unit. Passage of enabling legislation is necessary to make final consolidation effective. The city and county of Philadelphia have been the same geographically since 1854, but the dual government with its many problems had remained. Under the reorganized government, all county departments will become city units and all employees will be placed under civil service.

* * *

Proposals to adopt the council-manager plan met with mixed receptions. In Rome, N. Y., despite the opposition of both the Republican and Democratic city chairmen, citizens voted to replace the mayor-council government with the council-manager plan starting January 1, 1954. The vote was 4,971 to 4,597.

In Montclair, N. J., a serious setback occurred when voters rejected by 743 votes a proposal for supplanting the town's five-man commission with a seven-man council and manager form of government. The vote was 6,333 against and 5,640 for the council-manager plan. Former Montclair mayor and commissioner, Bayard H. Faulkner, whose work on a state level had been responsible for the legislation enabling local-government revision in New Jersey said, in explaining the outcome, "I am inclined to think that the major difficulty was in the fact that New Jersey is among the more backward states in the use of modern forms of government for municipalities and counties. In consequence, the people of our state have had little opportunity to become familiar with the advantages of the manager plan." Montclair voters also defeated a proposal to adopt civil service, by a vote of 8,527 to 2,959.

* * *

Delaware, Ohio, and Owensboro and Maysville, Ky., adopted the manager plan on November 6, while Keene, N. H., voted it out. Granite Falls, Minn., adopted the manager plan at an election on November 13.

* * *

In East Orange, N. J., foes of public housing were victorious in an advisory referendum to authorize the local housing authority to build low-rent housing projects. The vote was 7,141 to 5,644.

* * *

Richmond, Va., voters decisively rejected a proposal to build a multimillion-dollar crosstown expressway, 14,817 to 8,815.

An urban-redevelopment bond issue of $1,350,000 was defeated by Cincinnati voters, together with a $1,000,000 library bond issue. They approved, however, a 4.41-mill extra tax levy, a $14,000,000 school bond issue, a county-home tax levy, and a county-bridges bond issue. They defeated a proposal to increase each councilman's salary by $2,500, to $7,500.

* * *

In Cincinnati, Republicans won control of the City Council by a narrow margin, 5-to-4, a defeat for the City Charter Committee whose candidates had controlled the Council for many years.

* * *

Roland E. Gregg, Executive Secretary, Toledo Municipal League, reports that at the October 2 primary elections, Toledo voters approved water revenue bonds totalling $7,500,000; sewage-treament revenue bonds amounting to $10,000,000, and airport revenue bonds of $1,700,000. At the November 6 general election, however, they disapproved by 2-to-1 a proposed .5 mill two-year levy for purchase of voting machines, and failed to approve by the required 55% majority a 1-mill levy for additional funds to build a Child Study Institute.

* * *

In Cleveland, all ballot issues submitted to the voters were approved, reports Guy C. Larcom, Jr., Director of the Citizens League, including a county-roads bond issue of $10,000,000, and additional tax levies for welfare and operating expenses.

* * *

Elections by the proportional representation method were successfully conducted in 6 Massachusetts municipalities. In Worcester, Mass., where elections for both the council and school committee are held by P. R., the Citizens Plan E Association elected 7 out of 9 members to the council and 4 out of 6 members to the school committee.

* * *

Arlington County (Va.) voters favored three bond issues totaling $3,582,000, and rejected two others at $1,245,000. The three favored were: $1,382,000 for storm sewers; $1,318,000 for highways, sidewalks, curbs and gutters, and $882,000 for playgrounds and parks. Defeated were proposals for construction of a new court building and a $740,000 bond issue to build parking lots in the Clarendon business district.

See "The Municipal Bond Market" on page 163 of this issue for more detailed reports on the outcome of proposed local bond issues.

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How Watsonville, Calif., Repairs Sidewalks

By R. E. FOWLE
City Engineer
Watsonville, Calif.

WATSONVILLE, Calif., faced a problem common to many cities—a widespread need for the repair or reconstruction of curbs, gutters, sidewalks, and driveway approaches. The unsightly appearance of inadequate or damaged work, the absence of needed walks, the danger to pedestrians and vehicles, and liability questions in cases of accidents prompted us to inaugurate a repair program. The work followed these steps:

First, a charter amendment was passed, giving the Board of Aldermen, with the approval of the Mayor, the power to order certain public-works construction.

Second, new specifications and standards were drawn up, which covered data on portland-cement concrete and concrete mix along with information on standards for curb, gutter, sidewalk, driveway-approach, and cross-gutter construction.

Third, a notice to repair or reconstruct was prepared.

Fourth, Ordinance No. 505, covering the construction and repair of sidewalks, driveways, curbs, and gutters was approved by the Mayor and the Board of Aldermen.

Fifth, a public notice as well as the publication or Ordinance No. 505 was made to acquaint the citizens, some of whom may not have read the legal notice, with the program.

Power Granted to Aldermen

The charter amendment gave the Board of Aldermen and the Mayor the power to improve any street or alley, whether the property owners wished the improvement or not, provided the cost of the improvement was not greater than $2.50 per front foot.

The specifications and standards called for a good grade of concrete, and six sacks of cement per cubic yard of concrete. It also required that curb, gutter, and sidewalk be laid on a 2-inch sand cushion when the improvement was on adobe or clay soil. Of interest is the fact that the curb and sidewalk could be poured integrally if desired. Expansion joints were placed in the sidewalk at property lines unless the distance was greater than 60 feet.

How Program Works

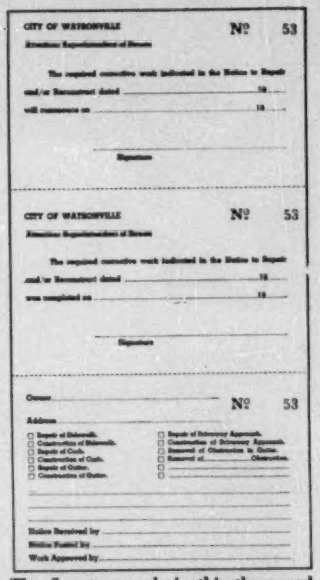
The work was introduced by a "Notice to Repair or Reconstruct." This has been found to be very workable. The card is divided into five parts. The top section is posted on the property. The middle section is either handed to the owner or is sent to him by registered mail. Three smaller cards are attached to the portion mailed to the owner. Two of these are mailed to the Superintendent of Streets and the other is retained by the City Engineer. The former two tell when the improvement will commence, and when it will be completed. The third gives data on the work to be performed.

The entire program has been highly successful. First, it had the backing and full support of the Mayor and the Board of Aldermen. The editor of the local paper also gave it his full support, and helped inform the public. The importance of the press as a means of keeping the public informed of city-improvement programs and other municipal activities can hardly be overemphasized.

Public Support

One of our local businessmen led off the program by having the entire frontage of his business lot improved by a new sidewalk; others followed rapidly and the program is continuing as fast as contractors can complete the work. Ten of the most hazardous walks, in scattered locations, were rebuilt one after the other in quick succession to keep the ball rolling. Notices were then sent to owners of property in given areas, in order to concentrate the work.

We finish our part of the improvement by writing a "thank you" letter to each property owner who has had work completed.



CITY OF WATSONVILLE Nº 53

Superintendent of Streets

The required corrective work indicated in the Notice to Repair and/or Reconstruct dated ____ 19__ will commence on ____ 19__

Signature

CITY OF WATSONVILLE Nº 53

Superintendent of Streets

The required corrective work indicated in the Notice to Repair and/or Reconstruct dated ____ 19__ was completed on ____ 19__

Signature

Owner ____ Nº 53

Address ____

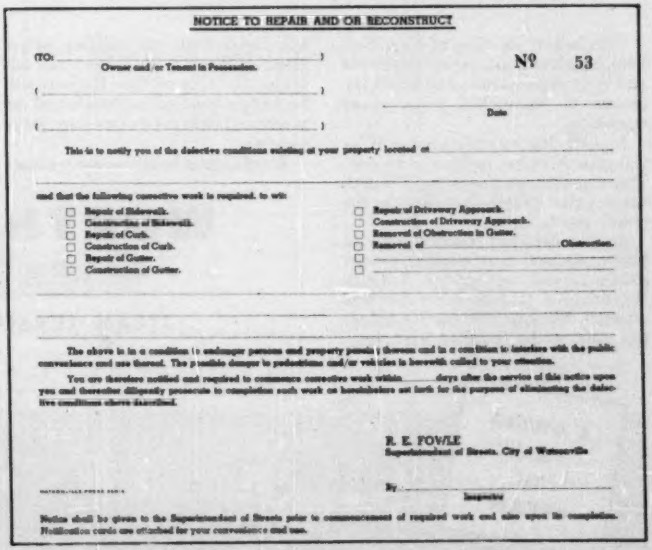
- ☐ Repair of Sidewalk.
- ☐ Construction of Sidewalk.
- ☐ Repair of Curb.
- ☐ Construction of Curb.
- ☐ Repair of Gutter.
- ☐ Construction of Gutter.
- ☐ Repair of Driveway Approach.
- ☐ Construction of Driveway Approach.
- ☐ Removal of Obstruction in Gutter.
- ☐ Removal of ____ Obstruction.
- ☐ ____

Notice Received by ____

Notice Posted by ____

Work Approved by ____

The first two cards in this three-card series indicate how work progresses. The third is a record for the inspector.



NOTICE TO REPAIR AND OR RECONSTRUCT

(TO: ____ Owner and/or Tenant in Possession.
(____
(____

Nº 53

____ Date

This is to notify you of the defective conditions existing at your property located at ____

and that the following corrective work is required, to wit:

- ☐ Repair of Sidewalk.
- ☐ Construction of Sidewalk.
- ☐ Repair of Curb.
- ☐ Construction of Curb.
- ☐ Repair of Gutter.
- ☐ Construction of Gutter.
- ☐ Repair of Driveway Approach.
- ☐ Construction of Driveway Approach.
- ☐ Removal of Obstruction in Gutter.
- ☐ Removal of ____ Obstruction.
- ☐ ____

The above is in a condition to endanger persons and property passing thereon and in a condition to interfere with the public convenience and use thereof. The possible danger to pedestrians and/or vehicles is herewith called to your attention.

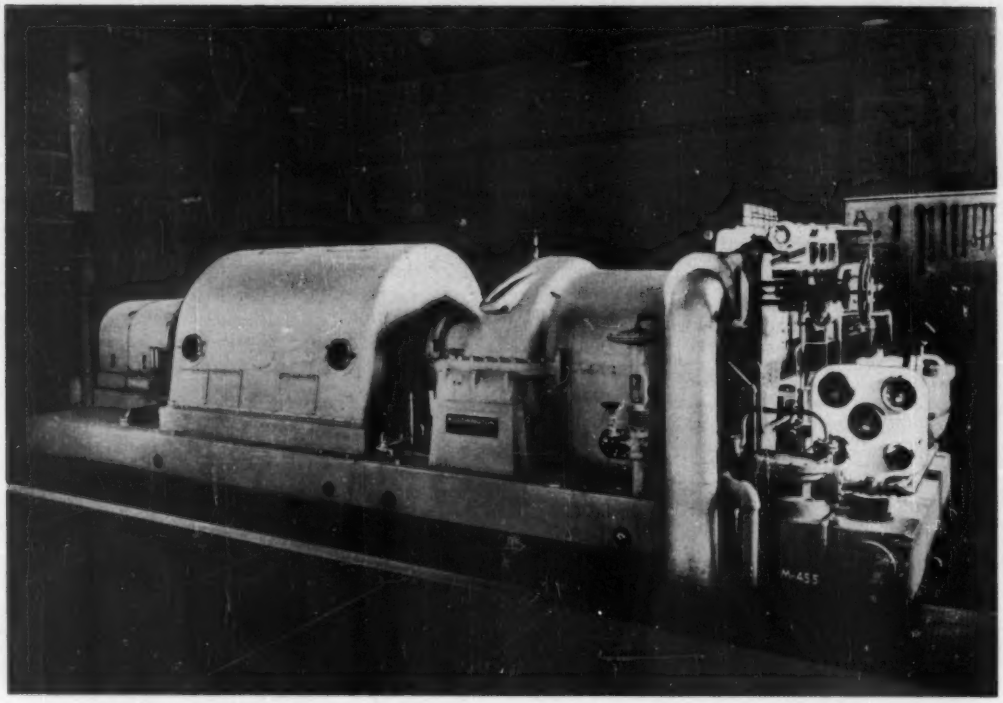
You are therefore notified and required to commence corrective work within ____ days after the service of this notice upon you and thereafter diligently prosecute to completion such work on hereinbefore set forth for the purpose of eliminating the defective conditions above described.

R. E. FOWLE
Superintendent of Streets, City of Watsonville

By ____ Inspector

Notice shall be given to the Superintendent of Streets prior to commencement of required work and also upon its completion. Notification cards are attached for your convenience and use.

A sign like this is posted on the property. Another is mailed to the resident.



Power Planning—for the Years Ahead

Worthington Turbine Generators for Two Harbors Power Plant

This is how the City of Two Harbors, Minnesota met expanding power and light requirements and found the answer to economical power plant operation.

In 1948 the city installed a Worthington 2500-kw turbine generator. This machine operates in parallel with other units already installed in the power plant.

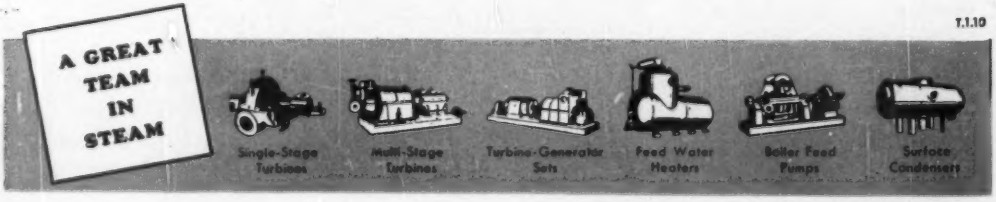
As the electrical demand grew, a survey showed that another power-producing unit was needed. Again, a Worthington turbine generator was selected. The new 3500-kw Worthington unit, to be installed next year, will supplement the existing power plant equipment. With this latest addition, the City of Two Harbors will be fully equipped to handle all its power and light needs for many years to come.

Worthington builds steam turbines in all types and sizes—and turbine-generator sets up to 10,000 kw. For proof *there's more worth in Worthington*, call our nearest office or write to Worthington Pump and Machinery Corporation, Steam Turbine Division, Wellsville, New York.

WORTHINGTON

STEAM TURBINE GENERATORS

T.1.10



New Docking Facilities for Ponce, Puerto Rico

WORK has recently begun on a $1,000,000 program for improving the docking facilities of Ponce, P. R., important port city serving 11 municipalities with a population of over 400,000 and located approximately 160 miles from San Juan. Scheduled for completion early in 1952, the port-improvement project has been actively promoted by Mayor Andres Grillasca Salas. Because of the rapid growth of new factories in Puerto Rico, in accordance with the industrialization program of the government, additional facilities are needed for the export of the island's products.

Present Waterfront Facilities Enumerated

Ponce already has a municipal pier of modern concrete and steel construction, 450 feet long, 110 feet wide, and with a shed 400 feet by 80 feet, adequate for cargo storage. A bulkhead wharf, municipally owned, is of reinforced concrete construction with a 30-foot-wide platform for loading and discharge. Two steel storage sheds, 58 feet wide and totaling 624 feet in length, are located on the wharf. A road provides access to the main highway system and a spur track leads to the municipal pier. Pipelines for the transfer of petroleum products and molasses to plants located in the vicinity are connected both to the pier and the nearby bulkhead wharf.

Work under way on the 1,080-foot bulkhead wharf section in the Ponce harbor.

The new construction consists of a 1,080-foot addition to the bulkhead wharf. When finished, this section will have two sheds 420 feet long and 80 feet wide, with a loading platform 50 feet in width.

Among the new factories are those of the St. Regis Paper Company, producers of paper bags; the Ponce Cement Corporation, which supplies cement to the island and to the Caribbean area, and the Textron Company, which exports all its fabrics to continental United States. Fish and juice canneries and leather and textile factories are now in the process of development near the port.

VICENTE RUIZ COLON
City Clerk
Ponce, P. R.

Fire Chiefs Overworked and Underpaid*

AT THE invitation of the International Association of Fire Fighters, the leaders of labor—William Green, President of the American Federation of Labor, and Philip Murray, President of the Congress of Industrial Organizations—have accepted membership on the Fire Prevention Committee of the International Association of Fire Chiefs. The International Association of Fire Fighters now has locals in every state and province in the United States and Canada, respectively, and in approximately 90% of the cities with populations over 25,000.

The fire chiefs of America have unquestionably given to the citizens of their communities the finest type of service. However, our public officials, and the citizens in general, have failed to compensate properly these loyal, zealous administrators of the most important branch of local government, the fire service.

By JOHN P. REDMOND, *President International Association of Fire Fighters, Washington, D. C.*

The private of today is the chief of tomorrow; the members of the fire service feel that the chiefs of the fire departments of America are not receiving salaries commensurate with their responsibilities to their communities. As a result, a fireman who is thinking of making a career of the fire-fighting profession and expecting some day to be the chief of the department feels that other careers with less responsibility will have a greater reward after a lifetime of service.

Many increases in salaries have been granted. Shorter hours have lessened the work week. Improved pension benefits, longer annual leaves, and other improvements have been instituted for the members of the fire-fighting service. The chief, however, is on duty 24 hours each day, 365 days a year, and when you consider this on the hourly pay base, he is often getting less than many of his subordinate officers.

Aside from being the buffer between his department and the politician or the public, he is responsible for the lives and property of all the citizens in his community against destruction by fires; yet he must justify every portion of his budget before the mayor, city manager, or city council.

Unless the chief has the tenacity to fight for requests in the budget for additional manpower, equipment, apparatus, new quarters for additional companies, new or additional supervising officers, many times these requests are red-penciled or reduced below the requirements of the National Board of Underwriters.

* Excerpt from an address of the 78th Annual Conference of the International Association of Fire Chiefs, Grand Rapids, Mich., August 14-17, 1951.

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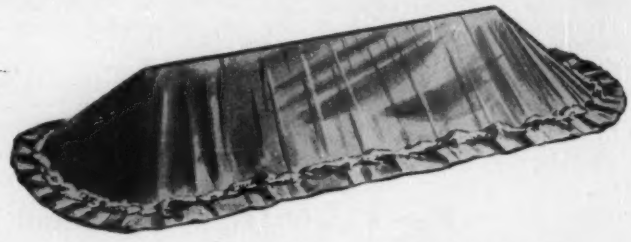

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RAYN-SHED is a durable, watertight, weather-resistant vinylite plastic sheet, carefully sewed into large strips, which in turn may be cemented together on the job to form even larger coverings as your salt pile grows. Sizes are standardized, so that easily made combinations will cover bulk salt piles of 2 to 20 carloads. RAYN-SHED is equally suitable to use over piles of bag salt.

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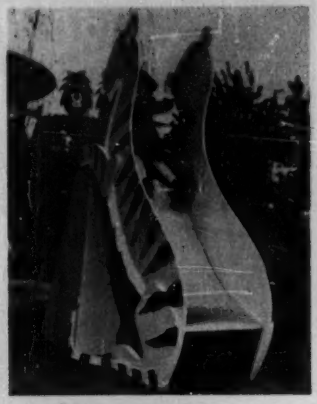
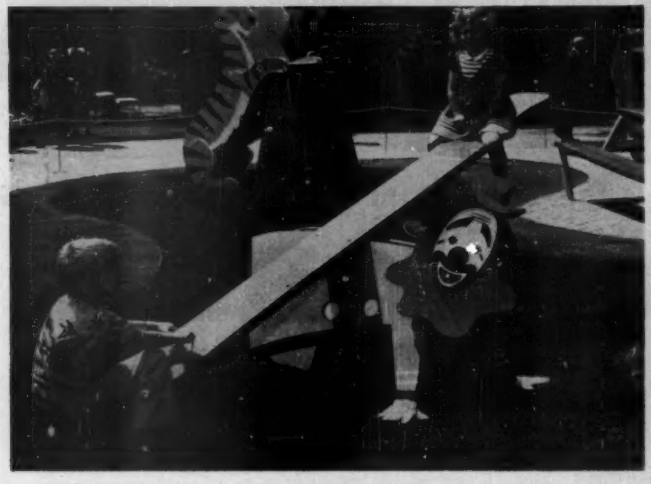
Colorful Playground Equipment for Youngsters

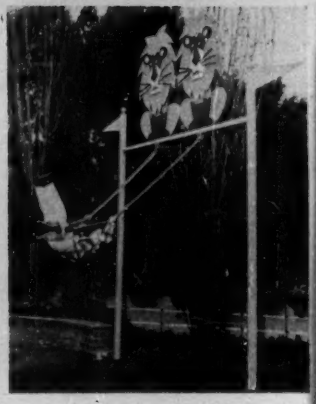
THE Park Department in Oakland, Calif., under the leadership of Superintendent William Penn Mott, Jr., is taking a step forward in designing colorful play equipment for small children which is imaginative, durable, and attractive.

Shown on this page are some of the items which were exhibited and won a first prize at the California Spring Garden Show. The equipment is being installed in the "Peralta Playland" area of Oakland's Lakeside Park, in the vicinity of the miniature train, merry-go-round, and pony ride concessions.

Superintendent Mott expects that the Park Department will develop and construct other features, including a hippopotamus cave-like play area, a series of monkey rings and trapeze bars, and a giraffe jungle-gym.







Far right, above, Oakland Park Department's stainless-steel tiger slide, to be installed in Lakeside Park in the new "birthday party" area. Right, below, the lion swing—uprights and crossbars are lavender, the lions tawny brown, and swing chains covered to look like tails. Below, the clown teeter totter.

Norfolk's Suggestion Box

THE suggestion-box idea is an old one, but it has recently been put to good use in Norfolk, Va. R. T. Nichol, Administrative Assistant to the City Manager, reports that since last January, Norfolk has had a suggestion box stationed by the front door in the lobby of City Hall to receive the comments, suggestions, and criticisms of citizens concerning their municipal government. The photos below show typical posters, prepared by a local artist, which are placed over the box. The poster is changed the first of each month.

The box is provided with pad and pencil. An average of 20 suggestions are found in the box each week. Twenty-five per cent are usually specific enough to justify investigation, reports Mr. Nichol. The most common subjects are street lighting and traffic engineering.

The City Manager acknowledges by letter or telephone all signed suggestions.

WE'RE FORGING AHEAD...
Have you any "SUGGESTIONS" about how the City Government can be improved?
MAYBE WE'RE ASKING FOR IT...
BUT....
Have you any "SUGGESTIONS" about how the City Government can be improved?
Have you any "Suggestions"
You might... ring the bell with a
LETS GET TOGETHER!
...Have you any SUGGESTIONS about how the CITY GOVERNMENT can be IMPROVED?
PLEASE DROP SUGGESTIONS IN THIS BOX

✓LOW POWER COSTS
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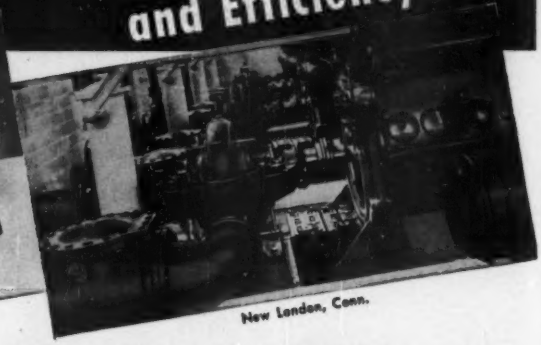
Sustained Quietness and Efficiency . . .

United States Army Water Works



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The Municipal Bond Market

Representative Municipal Bond Sales, November 1-9, 1951

Date of Sale		Amount	Purpose	Average Maturity (Years)	Net Interest Cost Per Cent
11-1	Boardman Local School Dist., Ohio...	$1,000,000	School	11-1/2	2.527
11-5	Independence, Mo.	1,475,000	Improvement	10	1.6062
11-6	St. Lucie Co. Spec. Tax School Dist. No. 1, Fla.	1,530,000	School	11	3.3356
11-6	Shelby, N. C.	875,000	Water	16-1/6	2.11
11-6	Wichita, Kans.	1,100,567	Improvement	5-1/2	1.42
11-6	Wilson, N. C.	830,000	Improvement	21	2.26
11-7	Jackson, Miss.	1,000,000	Improvement	12-1/3	2.49
11-7	Otter Tail Co., Minn.	1,500,000	Road and Bridge	11-5/6	1.8511
11-8	Martin's Ferry City School Dist., Ohio.	600,000	School	13-1/6	2.486
11-8	Yonkers, N. Y.	2,623,500	Improvement	6-3/4	2.015
11-9	Milwaukee, Wis.	2,000,000	School	10-1/2	1.4676

Independence Shown in Local Bond-Issue Election

By CATHERINE CLARK
Municipal Service Department
Dun and Bradstreet, Inc.
New York, N. Y.

THE November 6 election did not lack interest, though relatively few bond issues were submitted to the voters and regular municipal elections were held in only a few states. If any general conclusion can be drawn from the results of the election, it is that the American voter is still surprisingly independent.

The largest amounts of bonds submitted to the voters were in New York State. Of the eight constitutional amendments voted on there, all of which were approved, one authorized the state to place its credit behind $500,000,000 bonds to finance the "Thruway" now under construction, and another authorized New York City to issue, outside its debt limitation, $500,000,000 bonds for subway construction. Neither of these was, in the ordinary sense, a bond referendum. The purpose of the first was to save interest costs on bonds that would be issued in any event, and the second was a revision of the debt limits of New York State municipalities.

Leaving these rather special situations out of account, the voters, on the basis of incomplete returns, approved upwards of $100,000,000 bonds and turned down some $40,000,000. This was a puny total compared with the $1,000,000,000 voted on last November and the $1,600,000,000 in 1949, one of the reasons being that there were no large state issues included in this year's total. As she did last year, Ohio led all other states in the number of municipalities which submitted bonds to the voters.

A sizable percentage of the bonds voted on was for school construction, and most of the others were for familiar improvements — sewage-disposal systems, streets, municipal buildings, etc. An issue which did not fall into any of the usual categories was approved by voters of Monroe County, Miss.—$2,600,000 bonds to construct an industrial plant, which the county plans to rent to Textron, Inc.

As usual, the elections had some odd consequences, one of the most interesting being in Yonkers, N. Y. There the voters turned down a proposal to give a $500 cost-of-living increase to city employees, including policemen. The police, who had been unusually sympathetic to traffic violators during the pre-election weeks, developed a strong sense of duty as soon as the votes were counted. Since the policemen were only enforcing the law, most citizens recognized they had no real grounds for complaint. One, though, took the ticket-writing officer to task. "Hey, you can't do that!" he was quoted as saying. "I'm only 18, I wasn't even old enough to vote!"

Neighborhood Villages for The Aged Proposed

A "SPONSORED neighborhood village plan" as a partial solution to the problem of planning for an aging population was presented for discussion at the recent annual conference of the American Society of Planning Officials, by Walter E. Keyes, of Tallahassee, Director of the Florida State Improvement Commission.

This plan calls for large employers and labor unions, as well as other interests, to sponsor communities in Florida especially built for retired workers.

Properly organized and constructed [said Mr. Keyes], these communities or neighborhood villages will offer a happy and healthful life to retired workers within their means, and at negligible cost to the sponsor.

Essentially, the proposal is for the design and construction of a community of 500 or more family units, constructed without speculative profit, operated under one of several possible organizational plans, with capital costs to be secured from an employer's retirement fund or the usual mortgage sources, with the State of Florida to assist in location and planning.

It may be asked whether a community designed for and primarily occupied by retired persons is actually what such persons want and whether it is in fact good for them and for society at large.

On this point Mr. Keyes quoted a 1950 survey by the Florida State Improvement Commission of a random sample of retired persons in St. Petersburg. This reported that 45% of the retired group preferred to associate exclusively with people of their own age; that some 20% preferred the society of younger adults, and 28% wished to associate with persons of all ages.

It must be remembered also [said Mr. Keyes] that there will not be complete stratification of age in any such community. A significant percentage of retired persons have younger family members in the household. . . . Further, the neighborhood village would not be completely isolated. In concept it approaches what sociologists call a satellite community, a community large enough to bring together a wide variety of tastes and social attitudes to make for pleasant social relations, not so large as to be self-sufficient; sufficiently protected from surrounding communities to provide quiet and congeniality of atmosphere, not so isolated as to prevent daily intrcourse at all levels with people and elements in the whole area.

Mr. Keyes' paper went into considerable detail as to the planning of these neighborhood villages and described briefly three projects now under consideration. The complete paper may be secured in mimeographed form from the American Society of Planning Officials, 1313 East 60th Street, Chicago 37, Ill.

See editorial comment on page 7.

Noise Abatement to Be Studied at Course On Sound

BECAUSE of the growing interest in problems of noise among industry, the public, and municipal officials, the University of Michigan School of Public Health is sponsoring a four-day course to explore the subject, February 5-8. The course, entitled "The Acoustical Spectrum," will study the whole range of sound and noise abatement, with the aid of a staff of top authorities. Further information and copies of the program are available from H. E. Miller, Director of Continued Education, School of Public Health, University of Michigan, Ann Arbor, Mich.

Zoning and Planning Notes

Edited by NORMAN WILLIAMS, Jr.

Extension of Non-Conforming Use; Gasoline Storage Tanks

CALIFORNIA. *San Diego County* v. *McClurken*, 234 Pacific (2d) 972 (Supreme Court, August 24, 1951).

Permanent storage tanks were constructed within a residential zone, to store gasoline for a filling station located within an adjacent retail business zone. These tanks apparently replaced smaller movable fuel storage tanks used for another purpose, and the storage capacity of the tanks was quintupled. The county authorities brought an action to require the removal of the tanks, on the ground that their installation constituted the creation of a new and larger non-conforming use. The California Court held in favor of the county by a vote of 4 to 3. The majority opinion emphasized the policy of the law against the extension of non-conforming uses. One judge dissented violently, on the ground that the alleged charges in non-conforming uses were "a picayunish selection of trivialities."

Filling-Station Signs

MICHIGAN. *Levy* v. *City of Pontiac*, 49 North Western (2d) 80 (Supreme Court, September 5, 1951).

A special ordinance in the City of Pontiac limited filling-station signs stating the price of gasoline to small signs, one square foot in area and attached to the pumps. An action was brought by a company purchasing gasoline directly from the refinery and hauling it to its own service stations, at a saving of about 4 cents a gallon; and the Court held that this regulation was unconstitutional on several grounds. First, in the late 1920's the U. S. Supreme Court held that the retail sales of gasoline were "not affected with a public interest." (The Michigan Court did not mention that subsequently, in *Nebbia* v. *New York*, 291 N. Y. 502 (1933), the Court laid to rest the whole sterile argument about whether certain businesses are "affected with a public interest.") Second, the size of signs would have no detrimental effect on the public health, peace, morals, safety and welfare.

Restrictions on Pigs In Farming Area

NEW JERSEY. *Borough of Lincoln Park* v. *Cullari*, 83 Atlantic (2d) 233 (Appellate Division, August 31, 1951).

A Board of Health ordinance (passed in 1943) divided the Borough into two districts—a residential area where the keeping of pigs was prohibited, and a farming area where up to seven pigs could be kept as of right, and where a permit was required for more than seven. This case involved a 120-acre farm where 25 to 40 pigs had been kept since 1929, and where a permit was refused. When criminal proceedings were brought to enforce the ordinance, defendant argued that under the equal protection clause restrictions should be based on a sliding scale, varying according to the size of the farm. The ordinance was upheld on the ground that, since piggeries present health problems, therefore, it is reasonable to set restrictions on all establishments over a certain size, in order to restrict commercialized piggeries.

Traveling Front-Yard Regulations

NEW YORK. *Boudreau* v. *Albanese*, 106 N. Y. Supplement (2d) 649 (Supreme [lower] Court, September 12, 1951).

This case involved a so-called "traveling front-yard" requirement in the Syracuse zoning ordinance—i.e., a regulation that in a partly built-up block the required front yard should be equal to the average of the front yards for the other buildings in the block, or within a certain distance. The Court held that the provision specifying a maximum for required front yards in each district was limited to the special situation of corner lots. While the provision is carelessly drawn, this interpretation appears to be incorrect. However, the case involved a proposed apartment building in a long block that was apparently developed with individual homes.

Covenants Against One-Story Residences

NEW YORK. *White* v. *La Due and Fitch*, 303, N. Y. 122 100 North Eastern (2d) 167 (Court of Appeals, July 11, 1951).

A tract was subdivided and a number of lots sold during the 1920's, with covenants on almost all lots forbidding houses of less than two stories. During the depression the county foreclosed tax liens on many of the unsold lots. In an action to enforce the two-story restriction on one of the latter lots, the Court held that no uniform scheme of restrictions had been imposed on the entire tract. However, it was also held that the present developers were estopped from permitting a one-story house on one lot, because their sales agents had told other purchasers that restrictions against one-story buildings were in effect.

Launderettes, Including Dryers

NEW YORK. *MacMillan* v. *McCaffrey*, 106 N. Y. Supplement (2d) 673 (Supreme [lower] Court, November 31, 1950).

The New York City zoning regulations for business districts forbid "a steam or wet wash laundry other than in a hotel or hospital." In *Packer* v. *Board of Standards and Appeals*, 62 N. Y. Supplement (2d) 54, affirmed, 271 App. Div. 874, leave to appeal denied, 296 N. Y. 1060, the courts held that this did not prohibit a launderette—i.e., a retail self-service establishment providing coin-operated washing machines. In this case, the Court held that the installation of an extractor (or spinner) and a dryer was a necessary incident to a launderette business, and was therefore permitted therewith.

> To hold that a launderette store may be operated but not with essential additional and incidental equipment is to create not only chaos but absurdity.
>
> In the opinion of the court only sheer disregard of reality can induce a conclusion that the installation and use of the extractor and dryer has transformed the launderette into a steam or wet wash laundry and hence it has come within the restrictive provision of the zoning resolution.

The *Packer* case and this one both illustrate the complications which are likely to ensue when the attempt is made to cover new technological developments by applying language written to cover older types of establishments.

Office Buildings in Residence District

RHODE ISLAND. *Nutini* v. *Zoning Board of Review of City of Cranston*, 82 Atlantic (2d) 883 (Supreme Court, July 25, 1951).

NEW JERSEY. *Carroll* v. *Board of Adjustment of Jersey City*, 83 Atlantic (2d) 448 (Appellate Division, September 24, 1951).

In the Rhode Island case, the local zoning ordinance authorized the Board of Appeals, subject to appropriate conditions and safeguards, to permit —

> In any district any use or building deemed by the said board to be in harmony with the character of the neighborhood and appropriate to the uses or buildings authorized in such district . . .

Under this clause the Board approved a proposed office building for three dentists, together with accessory parking facilities for 18 cars, on a main highway in a residence district. The ordinance permitted a dentist to have his office in his home in a residence district. Two tourist homes were located in the immediate vicinity. The Court upheld the exception on the grounds that the proposed building would look like a residence and so would be in esthetic harmony with the neighborhood, and at this location the additional traffic attracted would not be sufficient to make much difference.

The New Jersey case involved an application to build, in a residence district in Jersey City, a building to rent to a state agency (the Division of Employment Security of the State Department of Labor). The Court held that such a building was prohibited by the terms of the ordinance as a business use in such districts, and that whatever immunity from zoning restrictions might accrue to a governmental agency would not be available to a private developer of a building for rent to such an agency—at least in the absence of overriding legislation specifically extending such immunity.

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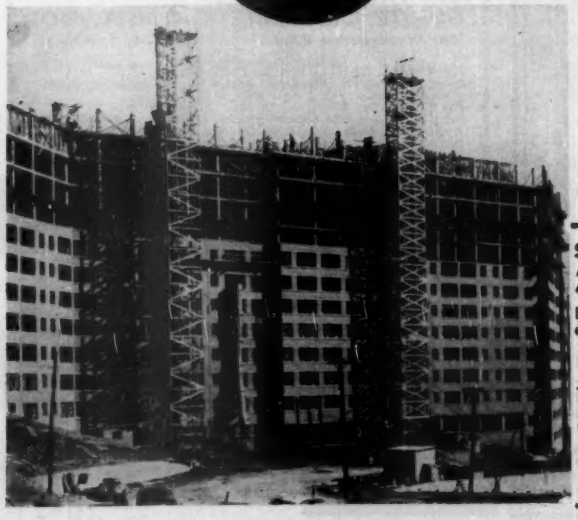

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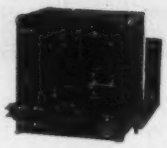

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Legal Notes and Decisions

Prepared by NATIONAL INSTITUTE OF MUNICIPAL LAW OFFICERS
Charles S. Rhyne, General Counsel

Amusement Park—City Liability for Injury on Scrambler in Amusement Park

In action against city for injuries sustained while riding on scrambler in amusement park, held, complaint stated a cause of action against defendant city which had leased park to Fair Association. *Davis* v. *City of Atlanta et al.*, 66 S. E. (2d) 188 (Ga. App., July 16, 1951).

Bonds—Validity of City Parking—Facility Issue

In action by city seeking a declaration of validity of city parking-facility bonds, held legislature had authority to and did authorize issuance of such revenue bonds. *Kansas City* v. *Fishman*, 241 S. W. (2d) 377 (Mo., July 13, 1951).

City Council—Power to Remove City Officers in Absence of Statutory Provisions

In petition to review action of city council of Warwick declaring vacant the offices of inspector of buildings and plumbing, held that under city charter, council had the ultimate power of appointment to such offices and also the power of removal in absence of statutory provisions to the contrary. *Lewis* v. *Porter et al.*, 82 Atl. (2d) 399 (R. I., July 13, 1951).

City-County Relations—Bridges

In action by City of Dresden to order county to rebuild and restore bridge, held evidence sustained finding that city was entitled to have bridge rebuilt. *Village of Dresden* v. *Yates County*, 98 N. E. (2d) 584 (N. Y., April 13, 1951).

City Employees—Appropriation Ordinance Not Salary-Fixing Ordinance

In action against city for alleged breach of contract of employment and for balance of salary due, held ordinance pleaded by plaintiffs as part of their contract was appropriation ordinance and not salary-fixing ordinance. *Dubagia* v. *Michigan City*, 98 N. E. (2d) 923 (Ind. App., May 25, 1951).

City Employees—Salary—Differential Payment While in Military Service

In action against city for difference between military compensation and pay which attached to position of bus operator during period of military service, held that signing of payroll by employee without protest and the acceptance of differential payment precluded plaintiff from later attacking sufficiency of payments received. *Lupo* v. *Board of Transp. of City of New York*, 105 N. Y. S. (2d) 623 (S. Ct. N. Y. County, June 18, 1951).

City Jail—Injury to Prisoner—City Not Liable

In action against city for personal injuries sustained in cave-in while working out sentence on street-building project, held city not liable since exercising governmental duties. *City of Atlanta* v. *Hurley*, 75 S. E. (2d) 44 (Ga. App., April 18, 1951).

City Records—Right to Inspect

In action to enforce right to inspection of records of City of Pawtucket dealing with tax cancellations, held that records were public records and plaintiffs entitled to inspect them. *McCoy et al.* v. *Providence Journal Co.*, 190 Fed. (2d) 760 (U. S. C. A. 1st Cir., July 17, 1951).

Firemen—Not Subject to Removal For Physical Inability

In action against City of Los Angeles for restoration to position in fire department, held that under Los Angeles city charter a regular fireman is not subject to removal because of physical inability to perform duties required of uniformed personnel in fire department. *Hostetter* v. *Alderson*, 234 Pac. (2d) 229 (Calif. App., August 16, 1951).

Gambling—Bookmaking—Ordinance—Effect of Failure to Announce Reasons of Emergency Measure

In appeal from conviction under ordinance providing for prosecution of one deemed to be a suspicious person wherein bill of particulars charged that defendant obtained his living by criminal means, namely by promoting games of chance through operation of illegal bookie establishment, held that although ordinance failed to take effect as an emergency measure for failure to announce reasons for the necessity, since no proceeding to institute a referendum was made until after expiration of time limiting such attack, ordinance became effective in same manner as regular ordinances. *City of Youngstown* v. *Aiello*, 100 N. E. (2d) 62 (Ohio, June 27, 1951).

Garbage-Disposal Plant Not Nuisance Per Se

In action against City of Miami to have city's garbage-disposal plant declared a nuisance and its further use prohibited, held since plant was originally located beyond limits of city it was not nuisance per se, and since complainants acquired property with knowledge of plant they were not entitled to equitable relief against further operation of plant. *State ex rel. Knight* v. *City of Miami*, 53 So. (2d) 636 (Fla., July 24, 1951).

Health—Milk—Requirement of Pasteurization in Metropolitan Area Invalid

In action against City of Ocala for mandatory injunction requiring city to issue permit to sell milk in city if inspection standards were met, held an ordinance forbidding the sale or delivery of pasteurized milk or cream within city unless pasteurized within metropolitan area and under inspection of city authorities is invalid. *Gustafson* v. *City of Ocala*, 53 So. (2d) 658 (Fla., July 3, 1951).

Intoxicating Liquors—License—Social Club Subject to Quota Law

In action by social club to review denial of application for liquor license, held social club was subject to Quota Law and since quota was filled, club was not entitled to liquor license. *In re Conemaugh Social Club's Liquor License*, 80 Atl. (2d) 606 (Pa. Sup. Ct., May 18, 1951).

License Tax on Gasoline—Invalid As a Revenue Measure

In action to secure declaratory judgment on validity of an ordinance levying a license tax on distributors, wholesalers, transporters, and retailers of gasoline equal to one cent on every gallon, held such was not a license tax but invalid as a general revenue tax. *Shively* v. *City of Keytesville et al.*, 238 S. W. (2d) 682 (Mo. App., April 2, 1951).

Loyalty Oath Held Valid

In mandamus proceedings to compel the setting aside of decision upholding the discharge of petitioners from county employment because of refusal to sign loyalty oath and affidavit with respect to subversive activity, held order requiring county employees to execute loyalty oath and affidavit was not invalid. *Hirschman* v. *Los Angeles County*, 231 Pac. (2d) 140 (Calif. Dist. Ct. App., May 14, 1951).

Loyalty Oath Sustained by Supreme Court

In action against Board of Supervisors of Elections of Baltimore City, held that Maryland statute requiring candidates for public offices in state to file with their nomination certificates affidavits that they are not subversive is valid. *Gerende* v. *Board of Supervisors of Elections of Baltimore City*, 71 S. Ct. 565 (U. S. S. Ct., Apr. 12, 1951).

Loyalty Oath—Validity of Ordinance Requiring Disclosure of Communist Membership

In action against Board of Public Works of City of Los Angeles for reinstatement and for unpaid salaries, held city may require its employees by affidavit to disclose past or present Communist affiliation, and ordinance requiring municipal employees to take oath that during five preceding years they had not advocated or belonged to organizations advocating overthrow of government by force or violence was valid. *Garner* v. *Board of Public Works of City of Los Angeles*, 71 S. Ct. 909 (U. S. S. Ct., June 4, 1951).

Pensions—Policemen—Wife Divorced In Foreign Jurisdiction Without Notice Declared Beneficiary

In action against city to recover pension as widow of retired deceased policeman, held that wife divorced in foreign jurisdiction without her knowledge and without notice was legal wife of deceased policeman and therefore entitled to receive pension. *Todd* v. *Policemen's and Firemen's Pension Fund of City of Newark*, 82 Atl. (2d) 233 (N. J. Sup. Ct., June 25, 1951).

Salary for Extra Work—Capacity Of City Officers to Make Implied Contract to Pay

In action against city to recover wages for extra work, held recovery denied because city officials whose conduct was relied upon as basis for implied contract to pay was without capacity under state law to make such contract. *Sorensen* v. *City of New York*, 99 Fed. Sup. 411 (U. S. D. C., S. D. of N. Y., July 20, 1951).

Solicitors—Ordinance Prohibiting Upon Private Residence Unless Invited Declared Valid

In action to enjoin enforcement of city ordinance prohibiting solicitors, peddlers, and others from calling at private residences unless invited, held that ordinance applies to both local and transient solicitors and hence does not violate equal protection clause of federal Constitution. *Phillips* v. *City of Bend*, 234 Pac. (2d) 572 (Ore., July 6, 1951).

Water—Validity of Ordinance Allowing City to Shut Off Water To Delinquent Consumers

In action to test validity of ordinance allowing city to shut off water to premises of consumers delinquent in payment of sewer-service charges, held ordinance was valid and not arbitrary. *Michelson* v. *City of Grand Island*, 48 N. W. (2d) 769 (Neb., July 16, 1951).

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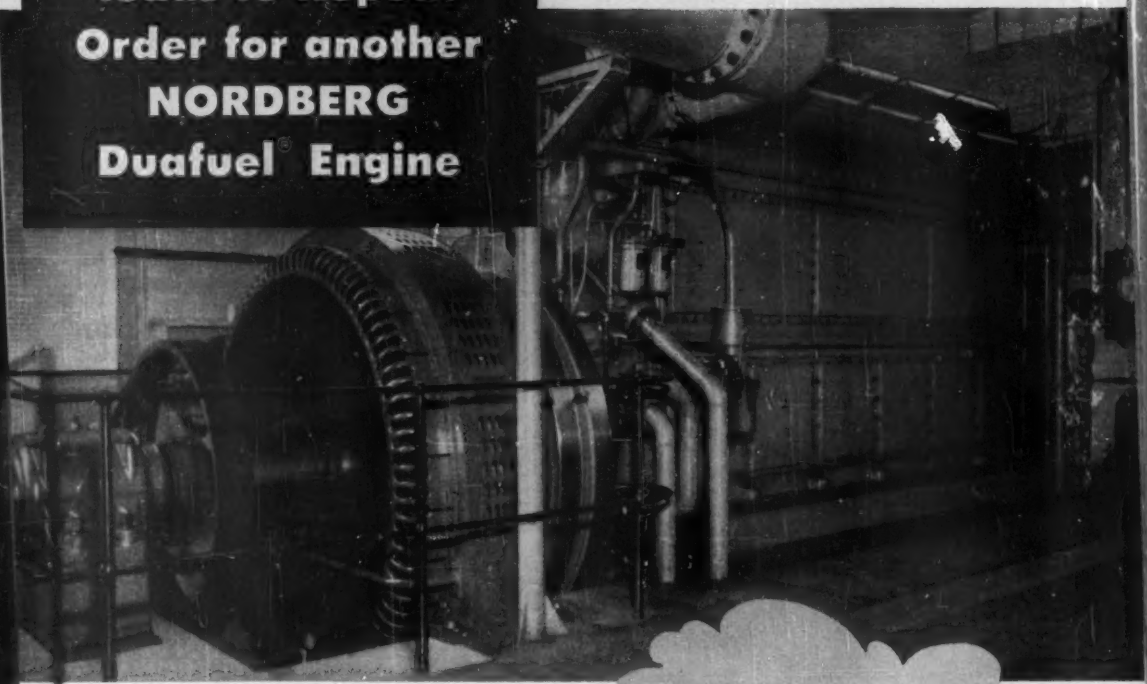

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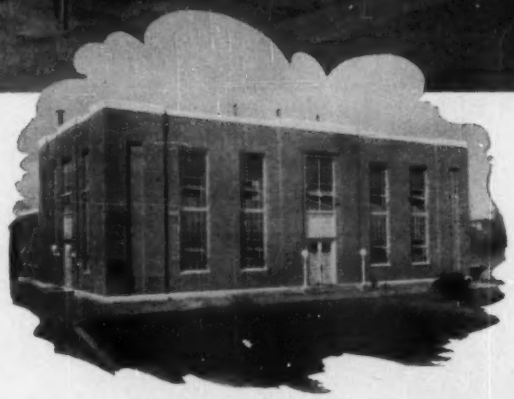

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Recent City Manager Appointments

The following portraits are of city managers whose appointments have been announced in preceding issues of *The American City*

Col. Frank W. Seifert
National City, Calif.

Gerald W. Shaw
Greenville, S. C.

J. Floyd Glisson
Titusville, Fla.

C. E. Perkins
Columbia, Mo.

Gordon E. Olson
North St. Paul, Minn.

Former assistant manager of Waynesboro, Va., GARNETTE Y. CARPENTER, JR., has been appointed manager of Manassas, Va. He succeeds James W. Ritter, Jr.

CHARLES R. CHEVALIER, JR., Superintendent of Public Works at Durham, N. H., has been appointed manager of Ashland, N. H. He succeeds Richard G. Marden, who has taken a position with the New Hampshire Taxpayers' Federation.

WILLIAM S. COBURN resigned the managership of Anne Arundel County, Md., and is now manager of Elizabeth City County, Va., succeeding W. R. FREEMAN, JR., who moved to the managership of South Norfolk, Va.

The first manager of LaGrange, Ill., is ROBERT A. FINLEY, previously secretary to the mayor of Lancaster, Pa.

J. A. FLEMING has succeeded W. T. Williamson as manager of Tucumcari, N. M.

JOHN H. IMMEL, formerly manager at Northampton and Lewistown, Pa., has returned to the profession as first manager of Penn Township, Pa.

The new manager of Atoka, Okla., succeeding J. E. Harris, is HUEY LONG, formerly manager of the Atoka County Chamber of Commerce.

EVAN E. PETERSON, a former manager of Redondo Beach, Calif., is the new manager of Fairbanks, Alaska. He fills the position vacated by Irving H. Call.

H. R. RICHARDSON, previously assistant manager of Lower Merion Township, Pa., has succeeded Joseph A. Warren as manager of Ashland, Wis.

The first manager of Garland, Texas, is L. E. STARK.

JACK D. STICKLEY left the managership of Cherokee, Okla., and has accepted the position as manager of Stigler, Okla., which was formerly held by William A. Reynolds.

Graham, Texas, appointed as its first manager J. P. TACKETT, former manager of Sulphur Springs, Texas.

CLARENCE E. RIDLEY, *Director*
International City Managers' Association
Chicago, Ill.

Local Governments and Loyalty Problems

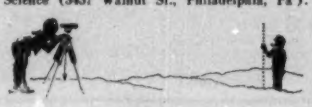
A WARNING that "the active and increasing participation of state and local governments in our current drive against Communism violates the sound principles of our American federalism" was voiced by Robert E. Cushman, Professor of Government, of Cornell University, at a recent meeting of the New York State Political Science Association.

The protection of the national security seems to me to be a national responsibility which must be dealt with in accordance with national policies and standards [said Dr. Cushman]. To farm it out piecemeal to the states and their administrative subdivisions invites confusion and conflict and seriously threatens civil liberty. In August of 1940 there was held in Washington a Federal-State Conference on Law Enforcement Problems of National Defense. It was attended by state governors, state attorneys general, and by representatives of the Department of Justice. From its deliberations emerged a gentleman's agreement, never publicized, that the states would not embark upon programs to punish offenders against the national security, but would turn such offenders over to the federal authorities. As a result, during World War II, uniform federal policy governed the management of the vital and delicate task of protecting the national safety. Local prejudices and hysteria were kept out of the picture, and we had none of the brutal "wildcat" activities in this area which so seriously blemished our civil-liberty record in World War I.

These self-imposed restraints on state action are now forgotten. The states are busily competing with each other to see which can pass the toughest laws to deal with Communists and fellow-travelers. There are more than 300 state statutes dealing with subversive activity. . . .

But this is not all. Nearly 200 cities, towns, and counties have enacted measures against Communism. These range from the registration of Communists to their expulsion from the city limits. A number of the measures have been held unconstitutional; many of them are grotesque in their stupid brutality. In suggesting that these state and local measures violate the principles of a sound federalism, I am again not stating a technical constitutional objection. The old case of Gilbert v. Minnesota, back in 1920, made it clear that the states may validly help protect the national safety if they want to. What I do maintain is that the very delicate balance which a democratic nation must seek to maintain between the demands of internal security and those of civil liberty calls for the wisest statemanship of which we are capable on the national level. The difficult problems involved ought not to be bungled by state legislatures, city councils, or town police.

EDITORIAL NOTE: Professor Cushman has developed this same point along with others related to it in an article entitled "American Civil Liberties in Mid-Twentieth Century," published in the May 1951 issue of *The Annals* of The American Academy of Political and Social Science (3457 Walnut St., Philadelphia, Pa.).



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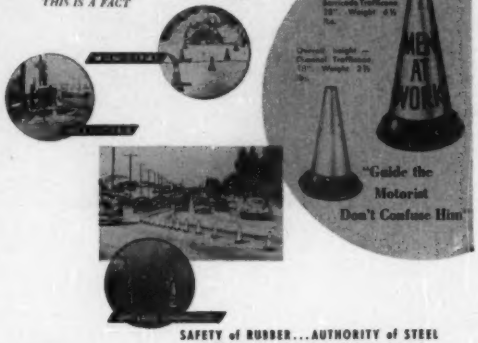

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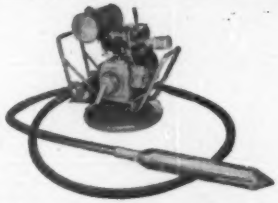

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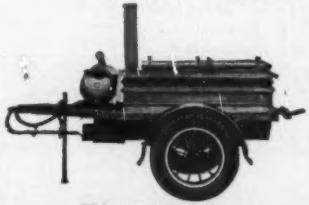

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Conventions — When and Where

Conventions listed this month for the first time are indicated by an asterisk (*)

Dec. 10-12—Washington, D. C.
AMERICAN MUNICIPAL ASSOCIATION. Annual Convention (Statler Hotel). Exec. Dir., Carl H. Chatters, 1313 E. 60th St., Chicago 37, Ill.

***Dec. 18-19—Indianapolis, Ind.**
INDIANA MUNICIPAL LEAGUE. Annual Meeting (Claypool Hotel). Exec. Sec.-Treas., W. Vincent Youkey, Room 401, City Hall, Indianapolis, Ind.

Jan. 15—New York, N. Y.
AMERICAN WATER WORKS ASSOCIATION—New York Section. Winter Luncheon Meeting (Hotel Park Sheraton). Sec.-Treas., R. K. Blanchard, 50 W. 50th St., New York 20, N. Y.

Jan. 15-18—Washington, D. C.
HIGHWAY RESEARCH BOARD. Annual Meeting (Natl. Academy of Science Bldg.). Acting Dir., Fred Burggraf, 2101 Constitutional Ave. NW., Washington 25, D. C.

Jan. 17-18—New York, N. Y.
NEW YORK SEWAGE AND INDUSTRIAL WASTES ASSOCIATION. Annual Meeting (Statler Hotel). Exec. Sec., R. C. Sweeney, New York State Health Dept., 21 Broadway, White Plains, N. Y.

Jan. 21-24—Houston, Texas
AMERICAN ROAD BUILDERS' ASSOCIATION. Annual Meeting (Rice Hotel). Exec. Vice-Pres., Lt. Gen. Eugene Reybold, International Bldg., Washington 4, D. C.

Jan. 27-31—Chicago, Ill.
ASSOCIATED EQUIPMENT DISTRIBUTORS. Annual Convention (Stevens Hotel). Exec. Sec., P. D. Hermann, 360 North Michigan, Chicago, Ill.

Jan. 28-30—Cincinnati, Ohio
ASSOCIATION OF ASPHALT PAVING TECHNOLOGISTS. Annual Meeting (Netherlands Plaza Hotel). Sec.-Treas., W. K. Parr, Box 376, Ann Arbor, Mich.

***Feb. 6-8—Buffalo, N. Y.**
ASSOCIATION OF TOWNS OF THE STATE OF NEW YORK. Annual Meeting (Hotel Statler). Exec. Sec., Edward F. N. Uthe, 91 State St., Albany, N. Y.

***Feb. 6-8—Los Angeles, Calif.**
CALIFORNIA CONFERENCE ON STREET AND HIGHWAY PROBLEMS. Annual Conference (University of California). Institute of Transportation and Traffic Engineering, University of California, Los Angeles, Calif.

Feb. 25-28—Detroit, Mich.
ASSOCIATED GENERAL CONTRACTORS OF AMERICA, INC. Annual Meeting (Statler Hotel). Managing Director, H. E. Foreman, 1227 Munsey Bldg., Washington, D. C.

Feb. 27-March 1—Milwaukee, Wis.
COMMUNITY CHESTS AND COUNCILS OF AMERICA, INC. Bi-Annual Meeting (Hotel Schroeder). Exec. Dir., Ralph H. Blanchard, 155 E. 44th St., New York 17, N. Y.

Feb. 28-March 1—Chicago, Ill.
AMERICAN CONCRETE PIPE ASSOCIATION. Annual Convention (Drake Hotel). Managing Dir., Howard F. Peckworth, 228 N. LaSalle St., Chicago 1, Ill.

March 5-7—Atlantic City, N. J.
ASSOCIATION OF HIGHWAY OFFICIALS OF THE NORTH ATLANTIC STATES. Annual Convention (Traymore Hotel). Sec.-Treas., A. Lee Grover, 1035 Parkway Ave., Trenton, N. J.

March 9-13—College Station, Texas
TEXAS WATER AND SEWAGE WORKS ASSOCIATION. Annual Meeting (Texas A & M College) Sec., V. M. Ehlers, 501 W. 33rd St., Austin, Texas.

April 10-12—Mesa, Ariz.
ARIZONA SEWAGE AND WATER WORKS ASSOCIATION. Annual Meeting (Maricopa Inn). Exec. Sec., Harry S. Jordan, State Health Dept., State Office Bldg., Phoenix, Ariz.

April 14-17—Lafayette, Ind.
PURDUE ROAD SCHOOL. Annual Meeting (Union Bldg., Purdue University). Exec. Sec., Ben H. Petty, C. E. Bldg., Purdue University, Lafayette.

April 16-18—Syracuse, N. Y.
AMERICAN WATER WORKS ASSOCIATION—New York Section. Spring Meeting (Hotel Syracuse). Treas., R. K. Blanchard, 50 West 50th St., New York 20, N. Y.

***May 4-9—Kansas City, Mo.**
AMERICAN WATER WORKS ASSOCIATION. Annual Conference. Sec., Harry E Jordan, 521 Fifth Ave., New York 17, N. Y.

***May 5-6—Washington, D. C.**
NATIONAL HOUSING CONFERENCE. Annual Meeting (Hotel Statler). Exec. Vice-Pres., Lee F. Johnson, 1025 Vermont Ave., NW., Washington, D. C.

May 15-17—Lewiston, Idaho
IDAHO MUNICIPAL LEAGUE. Annual Meeting (Lewis and Clark Hotel). Exec. Sec., R. W. Smith, Box 787, Weiser, Idaho.

***June 8-10—Bedford, Pa.**
PENNSYLVANIA STATE ASSOCIATION OF TOWNSHIP COMMISSIONERS. Annual Meeting (Bedford Springs Hotel). Sec.-Treas., H. A. Fritschman, 2325 Darby Rd., Haverltown, Pa.

***June 15-18—Minneapolis, Minn.**
ASSOCIATION OF STATE PLANNING AND DEVELOPMENT AGENCIES. Annual Conference (Nicollet Hotel). Exec. Dir., Walker H. Blucher, 1313 E. 60th St., Chicago 37, Ill.

***June 15-19—Boston, Mass.**
MUNICIPAL FINANCE OFFICERS' ASSOCIATION OF THE UNITED STATES AND CANADA. Annual Conference (Statler Hotel). Exec. Dir., Joseph F. Clark, 1313 E. 60th St., Chicago 37, Ill.

***June 23-27—New York, N. Y.**
AMERICAN SOCIETY FOR TESTING MATERIALS. 50th Anniversary Meeting (Hotels New Yorker and Statler). Asst. Sec., Robert J. Painter, American Society for Testing Materials, 1916 Race St., Philadelphia 3, Pa.

How Winnetka, Ill., Cures Icy Streets

By ROBERT L. ANDERSON
Village Engineer
Winnetka, Ill.

WITH today's labor market what it is, one scarcely can expect a crew of men to report at some odd hour in the morning to fight a sleet storm. However, in this mechanized age, we don't feel that it is necessary if proper equipment or methods are used.

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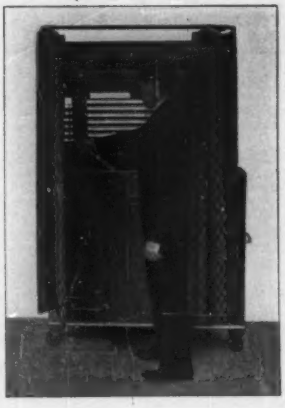

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Advertising Federation of America

Municipal and Civic Publications

Mayors' Handbook

A Handbook for Iowa Mayors—*Published by the Institute of Public Affairs of the State University of Iowa in cooperation with the League of Iowa Municipalities. Iowa City, Iowa.* 1951. 47 *pp.* $2.

Based on an earlier booklet by Professor Jack T. Johnson of Iowa State University's Department of Political Science, and Mayor Orville B. Rogers of Newall, Iowa, this revision is designed to aid Iowa's mayors in the understanding and performance of their duties. The mechanics of the office of mayor and the mayor's qualifications are described in one section, the executive powers and duties in another, and the mayor and the council in the third. The final section is devoted to the mayor's court which exists in all Iowa municipalities with a population of 15,000 or less that do not have a superior, municipal, or police court.

Tree Clearance Know-How

Tree Clearance for Overhead Lines—*By George D. Blair, Second Edition. Published by Electrical Publications, Inc., 22 E. Huron St., Chicago 11, Ill.* 1951. 242 *pp.*

The second edition of this textbook (first published in 1940) for public utility foresters has been brought up to date with respect to economics, power tools, and chemical brush control. It deals with such subjects as tree surgery, problems of laws, regulations, ordinances, engineering, design, safe practices, and public relations as they affect the removal of vegetation by public utilities. There are 82 illustrations showing clearly how trees should be cut and treated, branches lowered, overhead line poles erected, etc. Street and highway officials and park commissioners are among those who would find much valuable information in this book.

New Airport Directory

The "Aviation Week" Airport Directory—*McGraw-Hill Publishing Company, Inc., 330 W. 42nd St., New York 18, N. Y.* 1951. 250 *pp. and chart.* $3 *in U. S., $6 Foreign.*

More than 6,000 airports are listed with information on location, length of runway, type of ownership, beacon, lighting, field markings, obstructions, services, etc., for each one. Seaplane bases are also listed, as are state aviation boards and commissions, aviation distributors and manufacturers, association officials, CAA regional and district offices, municipal aviation officials, U. S. Weather Bureau offices, and U. S. and Canadian certified airlines. The Directory contains additional aviation information such as abbreviations, code distress signals, and international aviation vocabulary.

How Many Cars Do We Need During Emergency?

Automobile Transportation in Defense or War—*Prepared for the Defense Transportation Administration by Wilfred Owen, the Brookings Institution. October* 1951. 68 *pp. Copies from Superintendent of Documents, U. S. Govt. Printing Office, Washington, D. C.* 25 *cents.*

The Defense Transport Administration has sponsored this study because it realizes that new policies must be evolved in view of the increase of car registration from 25½ million to 40,000,000 in the last six years, and because the car is now a necessity in family life. By cutting out non-essential uses, the report claims, we could get along with 14,000,000 fewer cars than we now have on the road. It also recommends production during the next few years of some 4,00,000 cars annually, as compared with 6,300,000 in 1950. Charts, tabulations, and reasons for these conclusions are given in the text.

Recreation and Parks 1900-1950

Recreation and Park Yearbook: A Review of Local and County Recreation and Park Developments, 1900-1950—*National Recreation Association, 315 Fourth Avenue. New York 10, N. Y.* 1951. 72 *pp.* $1.50.

This Yearbook covers recreation and park services and facilities provided in more than 2,175 communities by a total of 2,277 agencies.

Forty pages are devoted to statistical tables recording, for each municipality reporting, the number and acreage of its parks; the managing authority; the number of paid and volunteer recreation leaders; the number of playgrounds, indoor centers, and outdoor facilities operated, and the expenditures for various purposes during 1950. State totals afford a basis for comparison between the states. The work of county, metropolitan, and district recreation and park agencies, which serve more than one locality, is reported in a separate table.

The Recreation and Park Yearbook enables public officials and interested citizens to compare in several respects their city's provision for recreation and parks with accepted standards and with that in other cities of the same population or in the same state.

Reports from International Housing and Planning Conference

Final Report of the XXth Congress of the International Federation for Housing and Town Planning—*Available from the Federation, Bezuidenhoutseweg 75, The Hague, Netherlands.* 1951. 116 *pp.*

This report on the 1950 meeting of the Federation, held at the City University, Amsterdam, contains several interesting summary reports on practices in various countries, including: "The Role of the Voluntary Housing Association" (cooperative building society); "The Implementation of Planning Measures"; Prefabrication and Building Technique for Housing"; and "Town and Country Planning and Industry."

Symposium on Dispersal

Defense Through Decentralization—A Symposium on Dispersal—*Bulletin of the Atomic Scientists, Vol. VII, No. 9. September* 1951. 48 *pp.* $1.

Included in this special issue are articles which should interest city officials everywhere. These include: "A Program for Urban Dispersal," by Donald and Astrid Monson; "Cities Are Here to Stay," by Robert E. Merriam; "Industrial Dispersion in the United States," by Ralph E. Lapp; "The Blight of Our Cities," by Goodhue Livingston, Jr.; "Industrial Dispersion as a National Policy;" "Federal Action Toward a National Dispersal Policy," by William L. C. Wheaton; "Politics in Dispersal," by Richard Bolling, and "Dispersal—A Selected Reading List."

Greenbelt's Government

The Government of Greenbelt—*By Christian L. Larsen and Richard D. Andrews. Bureau of Public Administration, University of Maryland, College Park, Md.* 1951. 78 *pp.*

This is another in the continuing excellent series of public administration studies of specific local governments in Maryland. The present report, analyzing Greenbelt's government structure and making some suggestions for improvement, is of special interest because Greenbelt is one of the nation's few pre-planned towns, from both a design and management viewpoint. The report points out the unusual number of community facilities available to Greenbelt residents, but indicates that there may be some financial problems when and if the community is sold by the Federal Government and most of the property within the municipal boundaries becomes subject to the property tax.

Metropolitan Area Government Problems

Governmental Organization in Metropolitan Areas—*By Betty Tableman. Bureau of Government, Institute of Public Administration, University of Michigan. Available from University of Michigan Press, Ann Arbor, Mich.* 1951. 179 *pp.* $2.50.

This report is useful because it helps bring up to date some of the material in the two basic works, *The Government of Metropolitan Areas in the United States*, by Paul Studenski (published in 1930), and *Metropolitan Government*, by Victor Jones (published in 1942). It summarizes methods of structural reorganization and gives examples of cooperative arrangements in effect in metropolitan areas throughout the country for handling area-wide needs and of metropolitan special districts which have been established.

The second half of the report is devoted to the metropolitan problem in Michigan, with special attention given to the Detroit metropolitan area, cooperating among cities, and general fringe problems.

Two of the appendices are of special value: Area-wide Provisions for Services, 140 Metropolitan Districts, and Characteristics of Selected Metropolitan Special Districts.

Suburban Growing Pains

Growing Pains in the Suburbs—*By Edwin H. Beachler. Reprinted from* The Pittsburgh Press. 1951. 40 *pp. Available from* The Pittsburgh Press, *Pittsburgh, Pa.*

This is the story of metropolitan Pittsburgh's building boom, told in a series of 16 articles which appeared originally in *The Pittsburgh Press*. The articles were the result of weeks of research, interviews with local officials, and grass-roots tours with residents. They focus on the lack of planning in the metropolitan area as a whole and on the "ox-cart system of local government which cuts Allegheny County into 129 separate municipalities." They describe the wide discrepancies in terms of local public services and the need for coordination. Article 16, "A Master Plan Needed," points to possible solutions.

This is an excellent series of articles which could be written about suburban growth problems in most major metropolitan areas of the United States. A somewhat similar series, devoted more to the serious problems resulting from inadequate local controls over real-estate development and home building in Bergen County, N. J., appeared recently in the *Bergen Evening Record* of Hackensack, N. J.

Community Resources

Community Resources—*By John E. Ivey, Jr., Woodrow W. Breland, and Nicholas J. Demerath. The John C. Winston Co.* 1951. 314 *pp.* $2.56.

This is a text for school children. It is also an exceedingly interesting and provocative story of the community that older people would find fascinating and profitable. It deserves a good spot on both the school shelf and in the community library.

The authors have packed in a wealth of living material, without crowding. The role of the community is strongly and warmly related. The special stories of rural trends, conservation and waste, human resources, industrialization and urbanization, planning, community team action, etc., are tellingly done.

It may be that the authors might have dealt more strongly and at greater length with the civic struggles which are the price of civic gains against inertia, political betrayal, and greed. However, the implications of the book are clear and plentiful.

This text, or an equivalent, seems to this reviewer a must in our schooling of the oncoming citizen.

John W. Herring

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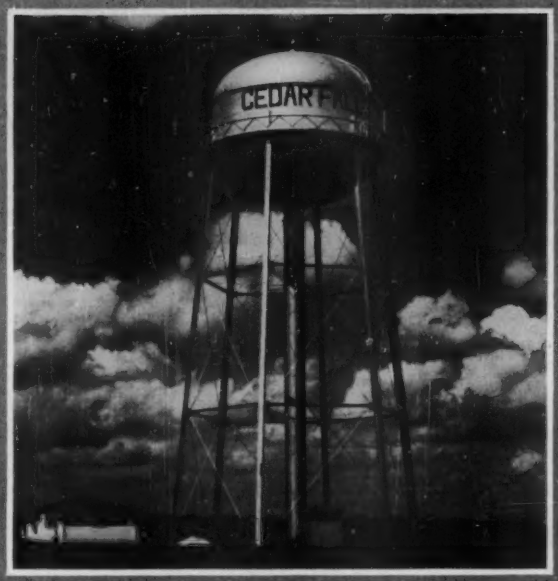

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School and University Yearbook

THE AMERICAN SCHOOL AND UNIVERSITY, 1951-52 —*The American School Publishing Corp., 470 Fourth Avenue, New York 16, N. Y. Nov.* 1951. 924 *pp.* $5.

This new 23rd annual edition of the basic yearbook devoted to the design, construction, equipment, utilization, and maintenance of educational buildings and grounds contains more than 50 authoritative articles by distinguished authorities in the fields covered.

Material is included which deals with both large city and small community planning, design, and construction problems. Articles of special interest to community officials include: A Community Studies Its School Plant Problems; The School Plant as a Community Recreation Center; A New Jersey Township Banks on Low-Cost Construction; A Community Social Center; Recent Developments in Pupil Transportation; How to Build a Low-Cost School; Planning and School Grounds, and High School Stadia.

Sections of the book are devoted to Public School Expansion Programs; Contemporary Design in College Buildings; Technical Developments; Business, Maintenance, and Operational Factors, and Trends in Planning Schools and Colleges. A large manufacturer's catalog section is especially helpful in indicating products and services offered. A selected bibliography on the school plant is also included.

A Mexican Village

LIFE IN A MEXICAN VILLAGE: TEPOZTLAN RESTUDIED—*By Oscar Lewis. University of Illinois Press, Urbana, Ill.* 1951. 512 *pp.* $7.50.

Twenty years after this Mexican village was studied by Robert Redfield (*Tepoztlan — A Mexican Village*), Professor Lewis undertook this restudy. The changes which had occurred in this single village were taking place all over Mexico and in many other parts of the world, as increased trade and the influx of wealth affected the cultural habits of the people, their standards of living, their aspirations, and their thinking.

As one of the few anthropological restudies of an area, it may mark the beginning of a trend toward more reliable anthropological and social-scientific research techniques. For example, a whole chapter is devoted to an analysis of Rorschach tests given to selected citizens. The study shows that the villagers now have a greater desire to attend school, to eat and dress better, and to spend more, but they are still guided by superatition and primitive beliefs. In other words, they have taken on only the more superficial aspects and values of modern life.

Of special interest to municipal officials is a chapter on the "Local Government and Politics" of the village which presents, in the author's words, "a sorry picture" of graft, corruption, and inefficiency.

There's Much to Learn—Social Research in Housing and Planning

SOCIAL POLICY AND SOCIAL RESEARCH IN HOUSING—The Journal of Social Science, *Vol. III. Nos.* 1 *and* 2, 1951. *Order from Association Press, 291 Broadway, New York 7, N. Y.* 188 *pp.* $1.75, *paper bound;* $3, *cloth bound.*

An excellent collection of thoughtful material, mainly directed at the importance of meaningful rethinking of public policies currently being followed in the housing and community planning fields. Part I, Perspectives of Housing and Planning Practitioners, includes articles on "Social Questions in Housing and Community Planning," by Catherine Bauer, and "Social Surveys as Planning Instruments for Housing: Britain," by Henry Cohen.

Part II, Contributions of Social Research, includes the following articles: "A Reformulation of the 'Filtering Concept,'" by Ernest M. Fisher and Louis Winnick; "The Ghosts of Home Ownership," by John P. Dean; "The Social Costs of Slums," by Jay Rumsey; "The Social Organization of Housebuilding," by Nicholas J. Demerath and George W. Baker; "Metropolitan Population and Municipal Government Expenditures," by Amos H. Hawley; "Stratification in Low and Middle Income Housing Areas," by William H. Form; "Race Relations in Public Housing," by Marie Jahoda and Patricia Salter West; "Architecture for Family Living," by Svend Reimer; "Architecture and Group Membership," by Leon Festinger; "Some Housing Factors Related to Mental Hygiene," by F. Stuart Chapin, and a concluding article on "The Interplay of Social Policy and Social Research in Housing," by Hanan C. Selvin.

What Form of Government Do You Need?

MICHIGAN CITIES AND VILLAGES—ORGANIZATION AND ADMINISTRATION—*By Claude R. Tharp. Institute of Public Administration, University of Michigan Press, Ann Arbor, Mich. Michigan Pamphlets, No.* 23. 1951. 40 *pp.* 50c.

This pamphlet presents an over-all picture of the procedures and practices in the organization of cities and villages in Michigan. The various governmental administrative forms developed under enabling acts are described and the advantages and disadvantages of each considered. The study should furnish a useful background to citizens who are interested in improving their local forms of government. The pamphlet is based on factual and legal information contained in *A Manual of City Government in Michigan* and *A Manual of Village Government in Michigan*, also by Mr. Tharp.

Revising Courses in Government

EXPERIMENT IN REVISION, REDESIGNING GOVERNMENT COURSES AT SYRACUSE UNIVERSITY—*Maxwell Graduate School of Citizenship and Public Affairs. Syracuse University Bulletin.* 1951. 68 *pp.*

A useful report, which may be of interest elsewhere, on the first year of an effort to revise the teaching of introductory courses in government at the Maxwell Graduate School of Citizenship and Public Affairs, Syracuse University. Professor Phillips Bradley, formerly with the University of Illinois, was given the primary assignment of course revision and analysis. The booklet describes the process and methods used to secure staff agreement and evaluate student response and reactions.

Church Planning

PLANNING AND BUILDING THE MODERN CHURCH—*By William Ward Watkin, FAIA.* Architectural *Record, 119 West 40th St., New York 18, N. Y.* 163 *pp.* 1951. $8.50.

This book, containing data on every phase of planning and every stage of construction of religious buildings, including such facilities as nursery equipment, schools, adult meeting rooms, etc., is of interest to planners and students of community affairs. It includes suggestions on site selection for both city and suburban churches, and recommends ways of estimating seating and parking requirements. The importance of complete cooperation between architect, clergy, and laymen is stressed throughout the book—which has many lessons in it on the design and construction of other public buildings and institutions.

Apartment-House Maintenance

WHAT EVERY LANDLORD AND TENANT SHOULD KNOW—*Published by Citizens' Housing and Planning Council of New York, Inc. 20 West 40th St., New York 18, N. Y.* 12 *pp.* 1951. 10 cents each. Special rates for quantity orders.

The handy, indexed pamphlet outlines the responsibilities of landlords and tenants for maintenance of buildings, and the procedure for filing complaints. Mail, Lighting, Garbage, Cleanliness, Painting, Fire Protection, Heating, Plumbing and Repairs are the general subjects covered. The pamphlet should be of interest in other cities, and can be adapted for use elsewhere as an aid in clarifying municipal, tenant, and landlord relationships.

Planning Tip Sheet

PLANNING POINTS—*Prepared by the Institute of Community Development, University of Oklahoma, Norman, Okla. Vol.* 1, *No.* 1. *November* 1951. 12 *pp.*

This edition marks the beginning of a series of leaflets designed for people who are concerned with community development—city officials, members of planning commissions, members of chambers of commerce, and other interested citizens.

The Institute of Community Development presents in a readable, informal style ideas for effective planning techniques, discussions of enabling legislation, success stories of towns that have gotten the job done, and news items of a planning nature.

Planning and Housing Reports

BALTIMORE, MD.—12 Questions. Annual Report of the Housing Authority of Baltimore City, 709 E. Eager St., Baltimore 2, Md. Illus. Maps. 1950. 20 pp.

BERKELEY, CALIF.—Berkeley Neighborhoods. A report on a study of Berkeley neighborhoods made by the Berkeley City Planning Commission. Maps. October 1950. 25 pp.

CAMBRIDGE, MASS.—Annual Report of the Cambridge Housing Authority, 1950-1951. Cambridge Housing Authority, Cambridge 38, Mass. Illus. Unpaged.

CHICAGO, ILL.—Public Housing in Chicago—Up to Nov. 1951. Report of the Chicago Housing Authority on how CHA has managed the public's investment. Mimeo. Illus. Maps. Graphs. Tables. 45 pp.

LENOIR, N. C.—City Planning and Lenoir. A report by the Mayor's Advisory Committee on City Planning. Available from Earl H. Tate, Mayor, Lenoir, N. C. Maps. July 1951. 36 pp.

LOS ALTOS, CALIF.—Los Altos, A Study of the Central Area. County of Santa Clara Planning Commission, Court House, San Jose 13, Calif. Mimeo. Maps. September 1951. 10 pp.

MAGNOLIA VILLAGE, WASH.—A Community Shopping Center Study: Suggested Plan for the Magnolia Village. City Planning Commission of City of Seattle, 503 County-City Bldg, Seattle 4, Wash. May 31, 1951. Maps. Charts. 17 pp.

MODESTO, CALIF.—Report of the Greater Modesto Committee. A condensation of the report on the study made by the Greater Modesto Committee for the purpose of developing a program for uniting Modesto. Detailed reports available from the Greater Modesto Committee, Room 16, County Courthouse, Modesto, Calif. 37 pp.

PROVIDENCE, R. I.—Capital Improvement Program, 1951-1957. The City Plan Commission of Providence, R. I., in collaboration with the Finance Director. Mimeo. Tables. August 1951. 20 pp.

——An Ordinance Zoning the City of Providence and Establishing Use, Height, and Area Regulations, Chapter 544, No. 691. September 21, 1951. 36 pp.

SASKATCHEWAN, CANADA—Subdivision Procedure in the Province of Saskatchewan. A chart outlining the proper procedure from the time an owner decides to subdivide his land to the time he receives a duplicate Certificate of Title for the lots in the new subdivision. Prepared by the Community Planning Branch of the Department of Municipal Affairs, Regina, Sask., in consultation with the Chief Surveyor, Land Title Office. October 1951.

WASHINGTON—Surveys, Subdivision and Platting, and Boundaries. Bureau of Governmental Research and Services, University of Washington, Seattle. Supplement to Report No. 96. Available from the University of Washington Press, Seattle 5, Wash. September 1951. 9 pp.

WASHINGTON, D. C.—Public Housing in Washington Under Management of the National Capital Housing Authority. Maps. Tables. 18 pp.

UNITED STATES—Annexation of Fringe Areas, A Selected Bibliography. American Society of Planning Officials, 1313 E. 60th St., Chicago, Ill. September 1951. Mimeo. 6 pp. 50 cents.

——Planning Advisory Service Information Reports. A listing of reports available from the American Society of Planning Officials, 1313 E. 60th St., Chicago 37, Ill.

——Selected References on Housing of Minorities. Office of the Administrator, Housing and Home Finance Agency, Racial Relations Service, 1626 K St. NW., Washington 25, D. C. September 1951. Mimeo. 60 pp.

——The 1950 Housing Situation in Charts. For sale by the Superintendent of Documents, U. S. Govt. Printing Office, Washington 25, D. C. 31 pp. 25 cents.

Other Reports Received

ANCHORAGE, ALASKA—Anchorage Reports on 1950. First Annual Report. Illus. 40 pp.

ARLINGTON COUNTY, VA.—Annual Report of the Department of Public Service for the Fiscal Year July 1, 1950 to June 30, 1951. Department of Public Service, Court House, Arlington, Va.

ATLANTA, GA.—Annual Report of the City Comptroller for the Year Ending December 31, 1950. 132 pp.

CALIFORNIA—Cross Filing in Primary Elections. Bureau of Public Administration, University of California, Berkeley. 1951 Legislative Problem No. 4. October 1951. Mimeo. 37 pp. $1.

CAMBRIDGE, MASS.—Mid-Century Cambridge. 1950 Annual Report. The Cambridge Planning Board, 57 Inman St., Cambridge 39, Mass. 47 pp.

DAYTON, OHIO—1950 Annual Report of the Division of Health. Mimeo. Unpaged.

DELAWARE—Annual Report of the Water Pollution Commission, 1950-1951. Delaware Water Pollution Commission, Dover, Del. Illus. Tables. Unpaged.

EASTON, PA.—Annual Report for the Fiscal Year 1950. Compiled by the City Clerk. 84 pp.

FORT COLLINS, COLO.—Annual Report of the Fire Department for the Year 1950. Illus. Tables. Unpaged.

HONOLULU, HAWAII—Controller's Annual Report on the City and County of Honolulu for the Fiscal Year Ending December 31, 1950. Tables. 95 pp.

HUNTINGTON PARK, CALIF.—Annual Report for the Fiscal Year Ended June 30, 1951. Compiled by the City Clerk. 35 pp.

KANSAS CITY, MO.—Annual Report of the Director of Finance of Kansas City, Mo., for the Fiscal Year Ended April 30, 1951. Tables. 85 pp.

——Summary Statement of Services and Responsibilities of the Department of Kansas City, Mo., During the July 1951 Flood Emergency. Prepared by the Research and Budget Department. August 30, 1951. Mimeo. Charts. 6 pp.

MIAMI, FLA.—Street Plans. The City Planning and Zoning Board, Miami, Fla. 1951. Mimeo. Maps. 35 pp.

MISSOURI—Annual Report of the Missouri Personnel Division for the Year July 1, 1950 to June 30, 1951. Personnel Division, State Department of Business and Administration, 630 Jefferson St., Jefferson City, Mo. Mimeo. Tables. 42 pp.

NEW HAVEN, CONN.—1950 Annual Report of the Department of Health. Tables. 43 pp.

NEW JERSEY—Proceedings of the Thirty-Eighth Annual Meeting of the New Jersey Mosquito Extermination Association. 159 pp.

——They're Your Dollars. A Program to Encourage a Comprehensive Study of Federal Grants-in-Aid to State and Local Governments. New Jersey Taxpayers Association, 143 E. State St., Trenton 8, N. J. 16 pp.

——Understanding the County Budget—A Guide for the Use of Taxpayers. New Jersey Taxpayers Association, 143 E. State St., Trenton 8, N. J. September 1951. 17 pp.

NEW YORK, N. Y.—Annual Report of the Comptroller of the City of New York for the Fiscal Year 1950-1951. 422 pp.

——Board of Water Supply, City of New York. A comprehensive 6-year report covering construction and operation during the period 1940-1946. 2 vols.

NORFOLK, VA.—Revised Budgetary Code and Its Use. Prepared by the Bureau of Budget and to take effect January 1, 1952.

NORTH CAROLINA—Chemical Character of Surface Waters of North Carolina, 1949-1950. By F. H. Pauszek and K. F. Harris and prepared in cooperation with the Geological Survey of the United States Department of the Interior. North Carolina Department of Conservation and Development, Division of Water Resources and Engineering, Raleigh, N. C. Bulletin 52, Volume 6. 1951. Tables. Graphs. 56 pp.

PASADENA, CALIF.—Annual Report of the City Controller for the Fiscal Year Ended June 30, 1951. 91 pp.

PORTSMOUTH, VA.—Annual Report of the Portsmouth Water Department, 1950-1951. Illus. Tables. 31 pp.

POUGHKEEPSIE, N. Y.—Poughkeepsie Town Finances: A Survey Report on the Financial Structure and Operations of the Town of Poughkeepsie, N. Y. Part I is concerned with finances of town government; Part II with assessments and property taxes. Poughkeepsie Area Development Association, 52 Market St., Poughkeepsie, N. Y. October 1951.

SAN FRANCISCO, CALIF.—Final Report of the Senate Fact-Finding Committee on San Francisco Bay Ports. Published by the Senate of the State of California, Sacramento, Calif. July 1951. 598 pp.

SARASOTA, FLA.—Why Industry Prospers in Sunny Sarasota, City Hall, Sarasota, Fla. Illus. Unpaged.

SOUTH CAROLINA—Chemical Character of Surface Waters of South Carolina, 1945-50. By F. H. Pauszek. South Carolina Research, Planning and Development Board, Columbia, S. C. July 1951. Map. Tables. 46 pp.

TENNESSEE—1950-51 Sanitary Service Charges in Tennessee. Tennessee State Planning Commission, 51 Commerce St., Nashville 3, Tenn. Pub. No. 226. September 1951. 113 pp. $1.

TOLEDO, OHIO—Annual Report for 1950 of the Department of Public Service, Division of Streets. Division of Streets, 2411 Albion St., Toledo 6, Ohio. 32 pp.

UNITED STATES—Air Terminal Vehicular Traffic Safety Guide. Published by the National Safety Council, 425 N. Michigan Ave., Chicago, Ill.

——Civil Defense in Industry and Institutions. Federal Civil Defense Administration Publication AG-16-1. 60 pp. For sale by the Superintendent of Documents, U. S. Govt. Printing Office, Washington 25, D. C. 25 cents.

Cedar Rapids, Iowa, Water Filter Plant Features Split Treatment

(*Continued from page* 85)

From the final clarifiers, the water flows to the old recarbonation basin and thence to the filter house through a 54-inch cast-iron main. Inside the new filter-building addition, this line branches into two concrete conduits serving the four old rapid sand filters and the four new filters. The new filters are the same size as the old units, each of which has a capacity of 3 mgd at a rate of 2 gpm per square foot of sand area. The Roberts Filter Manufacturing Company, of Darby, Pa., supplied and installed the filter equipment. Rate of flow controllers were furnished by the Simplex Valve and Meter Company, and the new meters were supplied by Builders-Providence.

The new filters are equipped with a fixed-pipe grid surface-wash system. The filter pipe gallery is of particular interest, as the design of flow controllers in a vertical position and the installation of wash-water sewers outside the building remove the objectionable maze of piping found in so many filter galleries.

The filter controls are air-operated and can be automatically operated from either the influent channel or the clear well.

Clear wells are located under the new filters and are connected with the old clear wells. The combined clear-water reservoir capacity is 1,000,000 gallons.

Three American Well Works high-service centrifugal pumps, with a combined capacity of 22 mgd. take suction from the clear wells. An additional pumping unit will be added in a year or two. Ammonia and Calgon are added to the water ahead of the pumps and post-chlorine is also added when needed. Chlorine dioxide can also be generated and fed into the effluent end of the clear wells when needed. A Proportioneers solution pump feeds the sodium chlorite used to produce the chlorine dioxide.

An additional project is already under way to provide more adequate chemical-treatment facilities. A building addition is under construction on the south end of the chemical feed house. This will eventually be a three-story building to house chlorine and other feeders and provide storage of chlorine cylinders and bagged chemicals.

Since the plant needed more bulk-chemical-storage capacity, there are plans to use the present 100,000-gallon wash-water tank in the tower of the building for lime storage, and to constructing a new 150,000-gallon concrete wash-water tank on a hillside across the road from the plant. These changes will be completed next year.

The Green & Gust Company, of Chicago, Ill., were the general contractors on the principal plant addition; the Dor Company, Jeffrey Manufacturing Company, International Engineering, Inc., and the Roberts Filter Manufacuring Company were equipment contractors on mechanical equipment and installation of filters. Loomis Brothers, of Cedar Rapids, are the contractors on the wash-water tank and chemical-plant addition. Total cost of these various contracts is approximately $850,000.

The plant additions were designed by Alvord, Burdick & Howson, of Chicago, Ill., whose resident engineer was Frank E. Grundler. Field Engineer for the Cedar Rapids Water Works has been C. M. O'Day. Plant Superintendent is Ben Coates, and Chief Plant Chemist is Arnold Cherry.

Which Catalogs Interest You?

Write directly to the manufacturers or use the coupon on page 25

For Street Lighting

282 Street lighting equipment for all sizes of communities may be obtained from the Line Material Co., Milwaukee 1, Wis. There are incandescent or mercury vapor units for white way lighting, and smaller units for residential and outlying sections. Available are a variety of reflectors, deflectors, and glassware, as well as standards, brackets, and mast arms, transformers, control and service equipment.

Consultation for Finance And Public Administration

283 Griffenhagen & Associates, 333 N. Michigan Ave., Chicago 1, Ill., provide consultation in public administration and finance. The company gives counsel and technical assistance to public officials, governing boards, legislative committees, special commissions and citizens' organizations on organization, procedure, personnel, facilities, finance, policies, and plants by the use of studies and analyses, examinations and appraisals, reports and recommendations, and installation of improvements.

Fluid Prevents Frozen Parking Meters

284 Lock-Ease graphited lock fluid prevents parking meter "freeze-outs," reports the American Grease Stick Co., Muskegon, Mich. A specially compounded lubricant that seals out moisture and dust, it penetrates quickly, leaving a graphited, rust-proofing film on working parts. It can be easily applied through tube holes or keyways and is available in a four-ounce Controlled Flow "drop or stream" container.

For Pipe Installation

285 The Hydrauger earth-boring tool makes 2 to 24-inch bores up to 250 feet long under streets, freeways, gardens, and pavements. According to the Hydrauger Corp., Ltd., 681 Market St., San Francisco, Calif., its method reduces cost from 80 to 90% by eliminating trenching and back-filling. For a copy of the *Hydrauger Booklet*, write to the manufacturer.

Sanitary Packing for Bell and Spigot Joints

286 The new Pakmaster is a completely sanitary packing for bell and spigot joints with more feet per pound, reports Sackner Products, Inc., 901 Ottawa Ave., Grand Rapids, Mich. The machine has a 22% greater yield per pound than any other sanitary packing material, claims the manufacturer. A lightweight, high-strength, sanitary binding medium holds the crepe tissue body to uniform diameter.

Sand and Cinder Spreader

287 The Model DD sand and cinder spreader in the winter applies sand, cinders, and rock salt for ice control, and in the summer, spreads calcium chloride for dust control, sand, and other material for seal coat work. Full information on the machine will be supplied by the Highway Equipment Co., Cedar Rapids, Ia., which also produces the Model R Hi-Way spreader for applying seal coat on newly laid oil.

Removes Grit from Sewage, Trade Wastes

288 *Bulletin No. 6411*, issued by The Dorr Co., Inc., Barry Place, Stamford, Conn., describes the Dorr Detritor, the modern method of removing grit from sewage and trade wastes. The company stater that its product removes over 95% of all grit larger than a definite size, produces a washed grit, drained of its free water, and containing not more than 3% by weight of putrescible organic matter. Detritors will operate under widely varying flows without requiring adjustments.

Street Markers

289 On request, the Miro-Flex Co., Inc., 1824 E. Second St., Wichita, Kans., will supply a catalog describing its signs for street marking and traffic control. The equipment is deeply and uniformly embossed on zinc-coated, bonderized steel, and also is available with glass or Lucite buttons.

Steel Water Reservoirs

290 Horton welded steel reservoirs are built in standard capacities up to 10,000,000 gallons. Obtainable in 500,000 to 3,000,000-gallon capacities are Horton radial-cone bottom elevated tanks. According to the Chicago Bridge & Iron Co., 2127 McCormick Bldg., Chicago, Ill., the welded steel construction means leak-proof joints and lower maintenance costs.

For Measuring Water Turbidity

291 For measurement of turbidity, determination of sulfate, and other applications, Hellige Inc., 3718 Northern Blvd., Long Island City 1, N. Y., produces the Turbidimeter, which eliminates tedious preparation and renewal of standard suspensions, use of long cumbersome tubes, and the difficulty of making readings with extinction-type apparatus. Write for *Catalog No. 8000-A* which describes the equipment.

One-Half Yard Excavator

292 The Hystaway backhoe for mounting on new or used Caterpillar D-8, D-7, and 74-inch gauge D-6 track-type tractors, is a one-half yard excavator. It operates first as a bulldozer and then as a shovel, and can also be used as backhoe, dragline, clamshell, or crane. A catalog may be obtained by writing to the Hyster Co., 2902-61 N. E. Clackamas, Portland 8, Ore., or at 1802-61 N. Adams St., Peoria 1, Ill.

Steel Poles For Street Lighting

293 Tubular steel poles, produced by the National Tube Co., Frick Bldg., Pittsburgh 19, Pa., do not obstruct vision because of their slenderness. The steel poles can support heavy loads and can be spaced farther apart when used for trolley or telephone line service.

Tractor Equipment

294 A complete new line of allied equipment for crawler tractors is offered by the Allis-Chalmers Mfg. Co., Tractor Division, Milwaukee 1, Wis. Baker, Carco, Gar Wood, and Tractomotive, are developed to match the new A-C tractors. The company states that each unit, like the new tractors, is easy to service and to operate.

Street Striping Equipment

295 General Traffic Controls, Inc., P. O. Box 1373, Tacoma, Wash., on request will send illustrated printed matter reporting on the Highway Super, street and highway striping equipment. The unit has many uses, among which are for every kind of striping, many types of paint spraying, roadside weed and mosquito control, painting bridges, guard rails, and buildings, and for painting crosswalks and curbs. All controls are within easy reach of the operator. The machine is of all-steel construction, and equipped for wet or dry reflective coating.

Automatic Emergency Lights

296 Big Beam automatic emergency lights are employed by government, military, and civilian institutions, office buildings, and bomb shelters. According to the U-C Lite Mfg. Co., 1063 W. Hubbard St., Chicago 22, Ill., this equipment has two 6-inch floodlights operating on a 9-volt standard dry battery and give powerful light over a wide area.

Cast Iron Pipe

297 The Alabama Pipe Co. of Anniston, Ala., produces Super de Lavaud cast iron pipe, centrifugally, in modern lengths. The company states that the extra strength, built into the pipe by the thoroughness of the Alabama centrifugal casting process, makes it able to absorb without difficulty many shock loads that might otherwise cause pipe distress. The concern will send literature and details about the pipe.

Street-Lighting Lamps

298 Amplex street-lighting lamps are specially designed and built to survive the vibration and shock of street traffic and to maintain a maximum percentage of light output throughout their long-burning life, states the Amplex Corp., Dept. K-11, 111 Water St., Brooklyn 1, N. Y. Available are a type and wattage for every kind of service.

For Cleaning Sewers

299 A bulletin on the Sewer Scooter, made by the Fitzgerald Engrg. Co., Inc., P. O. Box 289-G, Coral Gables, 34, Fla., is available on request. The self-propelled machine for 6 to 96-inch sewers, the company states, is equally effective for all conditions or problems of sewer maintenance. It cleans sewers of all sediments: rock, gravel, sand, and sludge that is difficult to move.

Reflective Coating Traffic Striper

300 The Reflecto-Liner, Model 12, is the only striper that will handle reflective binders, compounds, and plain traffic paints with equal ease, according to Wald Industries, Inc., Montgomery, Pa. A constant air supply of 100% reserve is maintained during operations. The Carry-Liner Model T2 is a new compact trailer designed to carry large-type striping machines. Bulletins No. 506 and 507 describe the equipment in detail.

Water Service Products

301 A complete line of water service products is offered by the Hays Mfg. Co., Erie, Pa., which reports that every fitting is precision machined, specially lubricated for enduring operation, and hydrostatically tested at 200 pounds or more. The Hays Duo-Stop is a combination corporation stop and saddle which is designed to install on 2-inch mains of either cast iron or steel.

Special Qualities In Cast-Iron Pipe

302 Mono-cast is Acipco pipe cast centrifugally in sand-lined molds. The American Cast Iron Pipe Co., Birmingham 2, Ala., reports that its equipment has as salient properties, uniform metal section, high physical strength, endurance, and freedom from inclusions. It can be supplied with joints for conveying water, gas, oil, gasoline, sewage, salt brine, and ashes.

Insulated Piping

303 Ric-wiL insulated piping meets all labor requirements and construction conditions, reports The Ric-wiL Co., 1562 Union Commerce Bldg., Cleveland 14, Ohio. Pipe and insulation are not required to bear any ground load, and the equipment assures highest thermal efficiency, and protected insulation. For information on central heating and Ric-wiL insulated piping, write the company's Dept 1L, asking for *Housing America, Form 4804*.

Valve Boxes For Waterworks

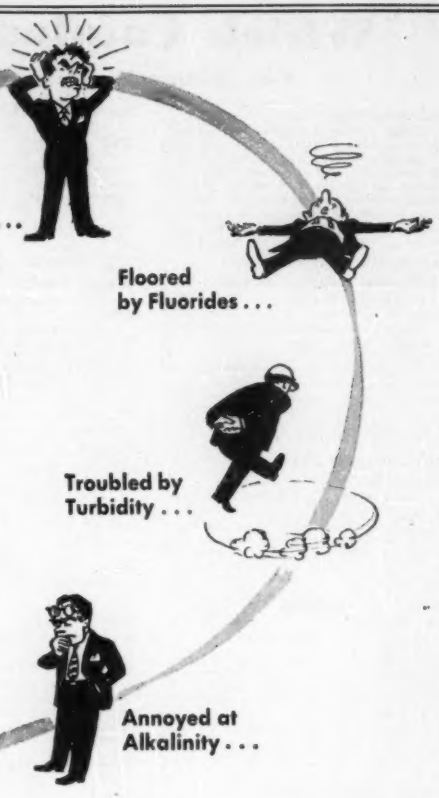
304 The Buffalo Pipe & Foundry Corp., Box 55, Station B, Buffalo 7, N. Y., on request will send a circular describing its 2-piece extra heavy sliding type of valve box for waterworks which is designed to cover the stuffing box and to slide instead of rotate. The company's 3-piece screw type valve box is designed so that it will adjust easily to any required street elevation and is strong enough to stand today's heavy street traffic. Also available are extension service boxes for the water and gas fields.

Street Sweeper Wire

305 Roadmaster wire for street-sweeper brooms is specially processed for high fatigue against breakage. Produced by the Johnson Steel & Wire Co., Inc., Worcester 1, Mass., it is cut and delivered in 100 and 200-pound boxes. The wire has a high scleroscope rating and uniform temper.

(Please turn to Page 179 for more Bulletins)

Men with WATER ON THE BRAIN . . .



Is there something wrong with your town's water supply? Hardness? Turbidity? Silica? Alkalinity? Fluorides? Color? Taste? Odor? If you are plagued by any one of them, it's a good idea to specify Permutit water conditioning equipment.

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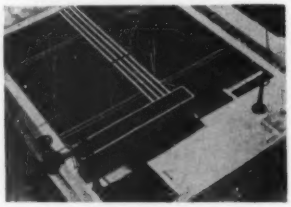

The Permutit Precipitator brings you a new and more efficient means for removing impurities from water. It does this by precipitation, adsorption, settling and upward filtration. Its sludge blanket is kept fresh and active at all times. The Precipitator requires less space, less time and less chemicals than previous designs of reaction and settling tanks.

Write today for full information about this economical equipment to The Permutit Company, Dept. AC-12, 330 West 42nd Street, New York 18, N. Y., or to Permutit Company of Canada, Ltd., 6975 Jeanne Mance Street, Montreal.

Water Conditioning Headquarters for Over 38 Years

PERMUTIT

Other Catalogs

Write directly to the manufacturers, or use coupon on page 25

Warning Signals

306 Protect your men and equipment with Red warning flares which are unmistakable warning signals, states the Signal Flare Division, of the Standard Railway Fusee Corp., P. O. Box 30-A, Needham Heights 94, Mass. The self-contained friction cap provides instant ignition and the brilliant red flame is unaffected by wind, rain, or snow. Red warning flares may be obtained in three sizes—15, 20, or 30 minute.

Steel Products

307 On request, Joseph T. Ryerson & Son, Inc., of Chicago 80, Ill., will send information on its principal products, among which are carbon steel bars, structurals, plates, sheets, tubing, alloys, stainless bars, five types of babbitt, and machinery and tools.

Seals for Municipal And Water-Works Usage

308 Seals for all municipal and water-works usage are furnished by The United Seal Co., 450 S. Pearl St., Columbus 15, Ohio. Available are any type of lead or wire seals for every need, including water electric, and parking meters, drums, boxes, trunk cars, fire extinguishers, cash boxes, governors and carburetors. Wire may be had in copper, galvanized, and steel, either cut to standard lengths or in spools or coils, single crimped 2, 3, and 4 ply in most gauges.

Daylight Projector

309 Daylight projectors for lecturing, sales promotion, training, teaching, and merchandising, are produced by Victorlite Industries, Inc., 5350 Second Ave., Los Angeles 43, Calif. The TravelelR Model VisualCast is equipped with a corrected lens and rack and pinion focusing. The OpaCast, opaque projector, will project 11-by-11-inch subjects. The manufacturer points out that VisualCast focuses picture on the screen with rack and pinion movement, and the image is sharp and clear across the screen.

Some New Features In All-Wheel-Drive Trucks

310 Better distribution of weight and power, providing maximum effort with minimum strain, is announced by the Four Wheel Drive Auto Co., Clintonville, Wis. Its trucks, available for snow and ice control, include models from 14,500 to 60,000 pounds, and a complete line of 4 and 6-wheel drive trucks. The FWD's, when winter ends, can still be used for heavy-duty highway maintenance jobs—grading and hauling. Write for your free copy of the *FWD Model Book*.

For Fluoridation

311 The new Wallace & Tiernan Fluoridator Series A-635 is suitable for the application of sodium fluoride or sodium silicofluoride in most communities, reports the Wallace & Tiernan Co., Inc., Newark 1, N. J. The basic feeder is volumetric with manual control, featuring the new two-directional feed screw for increased accuracy. Registers indicate the rate of feed and the weight of chemical in the hopper at all times.

For Sewage Treatment

312 Thermometers used in sewage treatment for digester temperature incinerator operation, and boiler control, are reported in new 4-page specification sheets issued by the Brown Instruments Division, Minneapolis-Honeywell Regulator Co., Wayne and Windrim Aves., Philadelphia 44, Pa. Construction and engineering details of the Brown indicating and recording thermometers are described in detail.

Cast Iron Soil Pipe And Fittings

313 Soil and waste disposal lines constructed with cast iron soil pipe and fittings provide permanent installations to protect the health of the community and guard against needless and expensive repairs, states the Cast Iron Soil Pipe Institute, Heurich Bldg., 1627 K. St., N. W., Washington 6, D. C. Write for illustrated printed matter.

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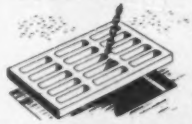
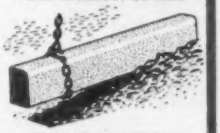


LIFTS CATCH BASIN GRATES AND MANHOLE COVERS



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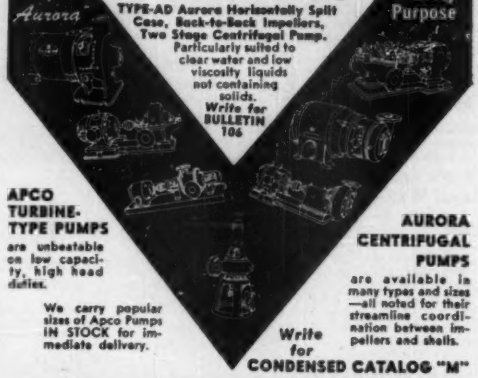

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Municipal Purchasing News

Information for officials interested in equipment and services for the construction, operation, and maintenance of municipal utilities

New York City Places Record-Breaking Street Sweeper Order

What probably is the largest single order for big-capacity street sweepers ever made by a municipality was placed recently by Andrew Mulrain, Commissioner of New York City's Department of Sanitation, when he accepted the low bid of the Wayne Mfg. Co., Pomona, Calif., for 50 new sweepers.

The department now has 21 of these three-yard sweepers together with 43 sweepers with a ¾-yard hopper capacity and only a single broom. The new order of 50 will allow the small machines to be retired. The department has 8,250 curb miles in the five Boroughs under its jurisdiction. Of this, about 65% lend themselves to cleaning by machine sweepers.

This order reflects the growing emphasis on mechanical sweeping adopted as a policy by the department in the last two years. Studies by the department, under Casmir A. Rogus, Director of Engineering, show that 20% of the curb area can be occupied by cars and still justify mechanical sweeping of the gutters. However, in many areas of the city the cars are parked much more densely, and this encourages unsanitary conditions and makes sweeping difficult. The department has, in these areas, attempted to enforce short-time no-parking restrictions to allow the sweeper to make its cleaning rounds. In one downtown area the parking prohibition is from 7 a.m. to noon on alternate sides of the street for alternate days. However, even this short-time restriction is meeting some objections from some adjoining business agencies and residents, notwithstanding the apparent vast improvement in street cleanliness of the affected areas.

Radio Trailer For St. Louis Police

In St. Louis, Mo., the Police Department designed and constructed a $5,000 mobile communications trailer equipped with a Motorola 250-watt f.m. 2-way base-station radio on the city's police frequency for police radio dispatching in the event of damage to police headquarters. Six Handie-Talkie portable radio-phones make it possible for persons performing rescue work out of the center to communicate with the dispatcher in places where vehicles cannot go.

A 3½-kva gasoline-powered emergency plant is installed in the trailer and at all times is ready for operation in case emergency is needed, as are an antenna for transmitting and five floodlights. Weighing 2,500 pounds, the trailer can be towed by an automobile or truck.

This communications center, designed and constructed by the St. Louis Police Department, is ready for action in case of emergency.

Spreader Features Adjustable Feedgate Controlled from Truck's Cab

The Highway Equipment Co., Inc., 616 D Ave. Northwest, Cedar Rapids, Iowa, announces that its new Leader Model W-Spread-All has an adjustable feedgate which is controlled from the cab of the truck governing the amount of material to be spread. The back endgate of this unit swings wide open so that it can be used for hauling and unloading all different types of material.

The specially designed body lowers the center of gravity to a large extent. This can be purchased either so the entire mechanism is driven from the power take-off on the truck transmission or by an independent gasoline engine. The width of spread can be controlled from a minimum of 6 feet to a maximum of 65 feet.

This machine, made by the Highway Equipment Co., has a width of spread that can be controlled from a minimum of 6 feet to a maximum of 65 feet.

Detroit's Sanitation Department Buys Five Lull Shoveloaders

Five Model 4-C Lull Shoveloaders pictured just before shipment to the City of Detroit, Department of Sanitation. These units were equipped with 2—2½-cubic-yard buckets and were mounted on Minneapolis-Moline UTIL industrial-wheel tractors. The Telford Equipment Co. of Lansing and Detroit, Mich., sold these units to the City of Detroit. They are produced by the Lull Mfg. Co., 3612 E. 44th St., Minneapolis 6, Minn.

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By Charles M. Haar

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1. The catalog listings, to be found on pages 25, 27 29, 32, 34, 177 and 179. Each listing has a number. Write the numbers of the catalogs you wish to receive on the reply card below.

2. The "Municipal Purchasing News" section, pages 181 through 205, where descriptions and illustrations of equipment and services are to be found. If you need additional information on any of these, jot down on the card the name of the product and its manufacturer.

In addition, should there be equipment not mentioned in this issue about which you would like information—such as manufacturer's name, source of supply, etc.—make your inquiry on the card. We'll do the rest.

To THE AMERICAN CITY's Catalog Supply Department,

Please send literature on items numbered at left, starting on page 25:

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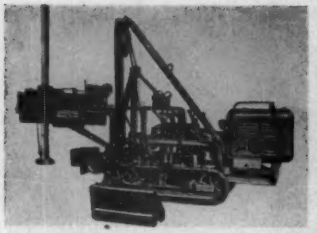


This equipment does all side crane work, as well as tamping and backfilling.

This Machine Tamps As It Backfills, Travels

A one-man-operated machine, the Model 80 tamps, backfills, lays pipe, unloads and handles pipe and sheathing, and does all types of light crane work, according to The Cleveland Trencher Co., 20100 St. Clair Ave., Cleveland 17, Ohio. The manufacturer states that it is designed to perform these operations better, faster, and cheaper than methods generally used heretofore.

Mounted on a crawler having 24 separate travel speeds, ranging from one foot per minute up to 2¾ miles per hour, the Model 80 delivers a 380-foot-pound blow, 45 times each minute, compacting the earth in layers that are 3 to 4 inches thicker than is practical by air or hand tamping. Its backfiller is a conventional dragline type with a telescopic boom. Without extra counterweights, it will lift a weight of 6,000 pounds, located 3 feet from the edge of the crawler track. Standard boom sections are extendable to 15 feet.

The machine is also available as a backfiller side crane only, with provision made for the addition of the tamper unit at a later date.

To Aid Communities' Industrial Programs

Announcement has been made of the organization of the Community Industrialization Service to aid communities throughout the country in their industrial programs. The firm is under the direction of Sanders A. Kahn, who has taught university subjects associated with this field and who has been successful in locating many large industrial organizations.

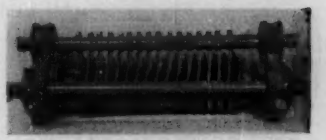
The organization's office will be at 522 Fifth Ave., New York 18, N. Y. It will survey a community in order to discover its industrial potentialities and then attempt to promote the community to logical industrial firms.

Cutter Breaks, Removes Ice All in One Operation

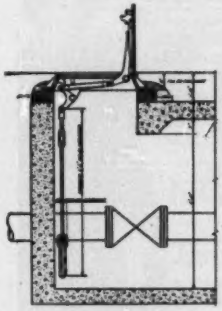
Graders can be converted into fast and efficient ice cutters with the new Martin Wobble Disc ice-cutting machine, according to the Minnesota Four Wheel Drive Co., 786 University Ave., St. Paul 4, Minn. It breaks up the ice and removes it—all in one operation.

The equipment fits any motor patrol by removing the scarifier and attaching the Wobble Disc in the same mounting brackets of the scarifier frame. It is operated through the same hydraulic controls used in operating the scarifier, and is available in widths from 30 to 40 inches.

The manufacturer reports that the unit operates on the rolling principle, rather than digging, and will not injure obstructions or the machine itself. It is self-cleaning, practically maintenance-free, built to withstand stresses and impacts of ice cutting, and rugged bearings support 4¼-inch mainshaft. Discs are beaded by electric welding, providing extremely tough cutting edge that withstands severe service.



Ice-cutting machine operates on the rolling principle rather than digging, and will not injure blacktop or concrete.



• The Wachs Safety Counterbalanced Vault Cover can be opened with ease and safety by one man. To open, merely insert the combination Key-Handle, give it a half turn and open the cover with one hand. The counterbalance weights that make lifting the cover a one handed job also hold it in an upright, protective position while a man is below. Designed and manufactured to withstand the heaviest traffic, many of these units have given trouble free service for over 40 years under the most rugged conditions. Several leading utility companies have had them in use for this period of time.

Write today for descriptive literature showing dimensions, weights, construction, prices, etc.

THE E. H. WACHS COMPANY
1525 NORTH DAYTON STREET · CHICAGO 22, ILLINOIS

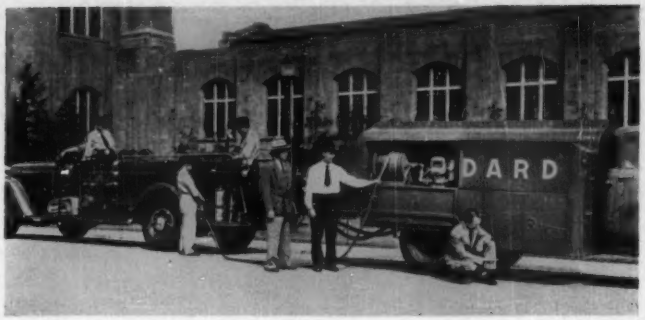
Save money
ON STREET SWEEPING
with
MOBIL-SWEEPER

Sweep your streets cleaner at less cost with dependable Mobil-Sweeper. Its large dirt hopper and special gutter broom design do a better job faster. It's the safest motor sweeper built. Sweeps all pavement even on steep hills. Let Mobil-Sweeper help balance your budget. Write on your letterhead for illustrated catalog.

Dealers in principal cities.

MOBIL-SWEEPER
DIVISION OF
THE CONVEYOR CO.
3240 E. WASHINGTON AVENUE
LOS ANGELES 23, CALIF.

Fueling a Pumping Engine in Fort Wayne, Ind.



In the event of electric power failure due to any cause which would incapacitate service station pumps, emergency and public works or transit vehicles can be fueled from tank trucks.

An example is given by the photograph above in which Fort Wayne, Ind., firemen, including Chief Cy Uebelhoer and George Hood, Chief of the Fire Prevention Bureau, are fueling a pumping engine. At the right, Paul Gotsch, of the Blackmer Pump Co., points to under-body location of plastic vane Blackmer truck pump which easily lifts gasoline from underground storage to replenish truck supply for emergency refueling.

Civil Defense officials of Fort Wayne's area have established "emergency stations" for spotting of fuel trucks on perimeter of the city. Details of the operation are available on request to the Blackmer Pump Co., 1901 Century Ave., Grand Rapids, Mich.

New Luminaire

This luminaire will utilize the complete range of mercury-vapor lamps in the horizontal burning position.

The new L-M Ovalite luminaire is designed primarily to utilize the complete range of mercury-vapor lamps in the horizontal burning position. According to the manufacturer, the Line Material Co., Milwaukee 1, Wis., it will also take incandescent lamps up to and including 800 watts on multiple circuits, and 15,000 lumen on series circuits.

The light on the large glass area becomes evenly distributed and reduces glare and increases visibility because of the low surface brightness achieved by locating the light center approximately 3 inches above the bottom edge of the reflector element and the use of elevating prisms in the enclosing refractor. The rectangular-shaped Alzak reflector provides an asymmetric light distribution, giving high utilization efficiency on streets and sidewalk areas.

The Ovalite luminaire will accommodate the A-H5, 11,000 lumen, the A-H1, 15,000 lumen, or the E-H1, 20,000 lumen mercury-vapor lamps in a horizontal position. It is offered for slipfitter and pendent mounting in 1¾ or 2-inch sizes.

EMBURY
The Lantern with
Balanced Air Control

... windproofs
the flame

Write: EMBURY MANUFACTURING CO.
WARSAW, NEW YORK, U. S. A.

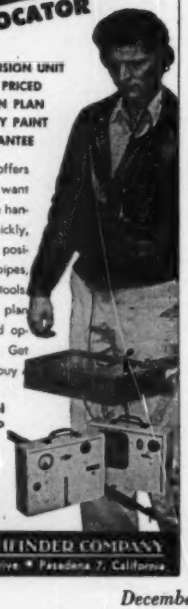
EMBURY
LANTERNS & TORCHES
EMBURY

YOUR BEST BUY
NEW
PATHFINDER
PIPE LOCATOR

★ POWERFUL PRECISION UNIT
★ ECONOMICALLY PRICED
★ LIBERAL TRADE-IN PLAN
★ BRILLIANT SAFETY PAINT
★ LIFE TIME GUARANTEE

Only PATHFINDER offers all vital features you want . . . combined in one handy, compact unit. Quickly, accurately it locates position and depth of pipes, tees, valves, buried tools. The liberal trade-in plan gives you an added opportunity to save. Get the facts and you'll buy PATHFINDER!

Write! State model and year of locator to be traded.



PATHFINDER COMPANY
1720 Beverly Drive • Pasadena 7, California

B-I-F Industries Adds Personnel

Announcement has been made by B-I-F Industries (Builders-Providence, Inc., %Proportioneers, Inc.%), and the Omega Machine Co.) Providence 1, R. I., of the appointment of new personnel in Pittsburgh, Minneapolis, and Providence.

Douglass Taber

Douglass Taber joined the company as manager of the Pittsburgh office. Since 1936 he has been associated with Greeley and Hansen, consulting engineers, in Chicago.

Raymond McIndoe Alden Carpenter

In charge of the Minneapolis office located at 221 Sexton Bldg., is Alden Carpenter, who has been with Hitchcock and Estabrook, consulting engineers at Minneapolis.

Raymond McIndoe, formerly with the Pennsylvania Department of Health, was appointed assistant manager of the Standard and Engineered Products Division of Builders-Providence, Inc.

Big Machine Features In Small Street Sweeper

New improvements make the little Wilshire street sweeper look like the bigger machine in everything but size. Its manufacturer, the Wilshire Power Sweeper Co., 526 W. Chevy Chase Drive, Glendale 4, Calif., announces that its Models 1000 and 1000-M are now equipped with a full floating brush assembly which permits vertical adjustment of the brush shaft without tilting or changing the position of the sweeper in relation to the surface to be swept. The rubber flaps remain in the same position under all sweeping conditions. The machines sweep a swath 48 inches wide.

All 48-inch Models 1000 and 1000-M are now equipped with dual-drive wheel to provide better traction and longer tire lift. These models also have, as optional equipment, a 7½-hp, 4-cycle Wisconsin engine furnished with self-starter. Model 800 has been made easier to handle in crowded areas. It may now be fitted with gutter brush attachment, as optional equipment. The 821 is particularly designed for use in warehouses having 30 or 36-inch aisles.

All Models 800, 1000, and 1000-M are now being equipped with Wilshire's Duscon dust control.

Bird-Proofs Buildings Without Killing

A newly discovered substance, called Roost-No-More, laid along ledges, ridges, sign tops, and other favored roosting and nesting spots, is proving to be the country's victory weapon in the war on pigeons, starlings, and other feathered pests, reports the manufacturer, the National Bird Control Laboratories, 1035 W. Lake St., Chicago 7, Ill.

Humane and harmless to birds, Roost-No-More is easily applied with a standard caulking gun. It lasts about a year and does not wash off in rains.

The company points out that its product combats the harm which is done by pigeons in defacing and cluttering buildings, increasing cleaning costs for municipalities.

Through the use of Roost-No-More, department stores, schools, churches, state capitols, hospitals, city halls, and entire business districts have been rid of pigeons.

How CLEANLINESS IS AUTOMATIC WITH Bennett Bilt WASTE RECEPTACLES

Everybody is a member of your cleaning department by conveniently locating Bennett Bilt Self-Closing Receptacles to invite their use for economical neatness and sanitation. *Put them to work for you today.*

ONLY BENNETT BUILT WASTE RECEPTACLES HAVE ALL THESE FEATURES:

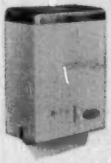
- Stainless steel feet
- Extra heavy-gage, corrosion-resistant steel
- All-welded construction
- Smooth surface—no catching or tearing of clothes
- Reinforced rounded corners for strength and appearance.
- Counter-balanced self-closing, independent doors stay closed to provide greater sanitation and reduce fire hazards
- Baked white or green enamel finish

Built for hard usage make these receptacles a natural "buy". Write for fully illustrated catalog.

Below shows how easy it is to remove Osnaborg bags or galvanized liners.

ALSO PRODUCERS OF PAPER TOWEL AND TISSUE PAPER DISPENSERS

Single fold junior paper towel dispensers.



No. 500 and No. 600 tissue paper dispensers for single fold and double fold respectively.

Double fold paper towel dispensers.

BENNETT MANUFACTURING CO., ALDEN, N.Y.

HELLIGE REAGENTS

AND

INDICATOR SOLUTIONS

WRITE TODAY FOR FREE COPY OF

CATALOG No. 600-20

HELLIGE

INCORPORATED

3718 NORTHERN BLVD. LONG ISLAND CITY 1, N.Y.

HEADQUARTERS FOR COLORIMETRIC APPARATUS

AMONG WATER WORKS MEN...

THE

ELLIS PIPE CUTTER

is *Best*

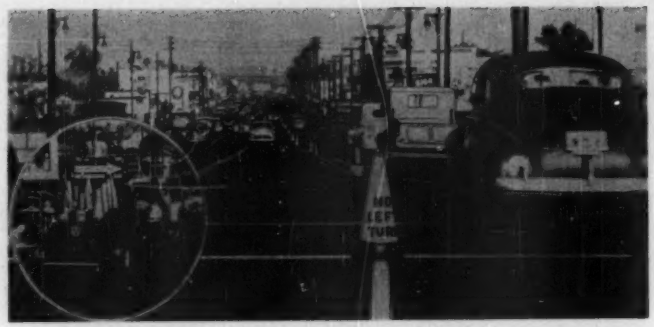
FOR CUTTING LARGE SIZES OF PIPE

No. 01 Cuts Pipe	No. 1 Cuts Pipe
4" to 8"	4" to 12"

Write for circular and price list No. 34AC on our complete line of pipe cutting tools.

ELLIS & FORD MFG. CO.

FERNDALE 20, MICH.



These Trafficones, placed on a busy street in Los Angeles, have the appearance of steel but are made of safe, flexible rubber.

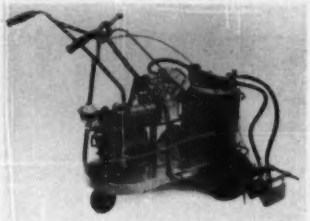
Los Angeles Saves $150,000,000 by Trafficone Use

Ralph T. Dorsey, City Traffic Engineer, Los Angeles, Calif., claims that this would have been the cost of constructing auxiliary highways for rush-hour traffic if the Trafficone System of Traffic Control had not been available. He states that "these rubber cones are the best engineered safety device I have ever seen in over 30 years of traffic work."

Manufactured by the Interstate Rubber Products Corp., 908 Avila St., Los Angeles, Calif., the Trafficones have the appearance of steel but are made of safe, flexible rubber. The system consists of the Barricade Trafficone, standing 40 inches high (with adapter sign) 28 inches without, weighing 6½ pounds, and the Channel Trafficone, standing 18 inches high, weighing 2½ pounds.

The company points out that advantages of its equipment are that traffic barriers and lane channeling are set up in one-tenth of the time formerly required with wooden and wire markers, minimum space is required to transport and store, plus no breakage and distortion. Trafficones are being employed by municipalities, contractors, schools, utilities, police departments.

Descriptive literature on the equipment may be obtained by writing to the manufacturer.



This traffic-striping machine will paint lines in any width from 2 to 6 inches wide.

One-Man Traffic Striper

Those difficult traffic-striping problems in parking lots, at pedestrian crosswalks, on playgrounds, and similar locations, are solved easily with the Mark-Rite Econo-Liner, according to the Universal Mfg. and Sales Co., 8716 S. Santa Fe Ave., South Gate, Calif.

The liner is operated by one man; it will paint lines in any width from 2 to 6 inches wide. The spray gun is served by a compressor delivering 4 cubic feet of air per minute. The supply tank holds 5 gallons. Total weight of the unit is 170 pounds.

The manufacturer reports that many cities are using this machine for their traffic-center lines, parking lines, and pedestrian zones.

American Vacuum Leaf Loader

Solves your leaf or clean-up problem

Write for leaflet

LEAF LOADER DIVISION

American Structural Steel and Tank Co.

21050 W. 8 MILE ROAD DETROIT 19, MICH.

Frank T. Sheets Dies

Frank T. Sheets, 61, president of the Portland Cement Association, 33 W. Grand Ave., Chicago 10, Ill., since 1937, died suddenly on Nov. 3 in Passavant Hospital, Chicago.

F. T. Sheets

A nationally known highway engineer, he joined the association in 1933 as consulting engineer with a background of 12 years as Chief Highway Engineer and Superintendent of Highways for the State of Illinois. Among important technological advancements made in the fields of portland cement and concrete while he served as director of development for the P.C.A. were the development of soil-cement for paving light-traffic roads and streets, and the tilt-up method of constructing buildings. During his tenure as P.C.A. president, Mr. Sheets had an important part in the adoption of highway planning on a national scale and the development of the highway program of the Automotive Safety Foundation.

He served as president of the American Association of State Highway Officials, of the Mississippi Valley Highway Conference, of the Central Illinois Section of the American Society of Civil Engineers, and in 1929 was an official delegate from the United States Government to the Pan-American Highway Congress at Rio de Janeiro.

Mr. Sheets was the author of *Concrete Road Design, Simplified and Correlated with Traffic*. He is survived by his mother, Gertrude, of Springfield, Ill., and a son, Frank T., Jr., of San Marino, Calif.

Hydraulic Hoist Filter Insures Clean Fluid

Wherever hydraulic hoists are used, whether in maintenance garages for truck hoists, in dump trucks, or in controlling bulldozer blades, grader blades, loader buckets, or other equipment, the Marvel Synclinal filter will reduce maintenance problems, according to the Marvel Engrg. Co., 625 W. Jackson Boulevard, Chicago 5, Ill.

The company reports that the filters insure clean hydraulic fluid, and new models have capacities of 75 and 100 gallons per minute. Other models range from 5 gallons per minute up through 8, 10, 20, 30, and 50, with a choice of wire-mesh sizes from coarse 30 to fine 200. All models, described in Folder No. 105, are available for either sump or line installation.

BRAXMAR BADGES

Standard Badges Since 1879

Write for circular illustrating badges for Police, Fire and other City, County and State Officials

John O. Veit, Pres.

C. G. Braxmar Co., Inc.
216 E. 45th St., New York 17, N. Y.

Are You—

WASTING WATER?

ELIMINATE WILFUL AND UNNECESSARY WASTE BY INSTALLING ROSS VALVES TO EFFICIENTLY REGULATE DISTRIBUTION PRESSURES.

PRESSURE REDUCING VALVE

Maintains constant reduced pressure at downstream side of valve.

ROSS
1879

COMBINATION PRESSURE REDUCING AND BACK PRESSURE VALVE

BACK PRESSURE VALVE

Maintains constant back pressure at upstream side of valve.

OTHER ROSS PRODUCTS:
HYDRAULIC AND ELECTRIC CONTROLLED VALVES, ALTITUDE VALVES — FLOAT VALVES — RELIEF VALVES STRAINERS — HYDRAULIC BOOSTER PUMPS AND SPECIALTIES

Write for Our Catalog No. 50

ROSS VALVE MFG. CO., Inc.
5 OAKWOOD AVENUE TROY, N. Y.

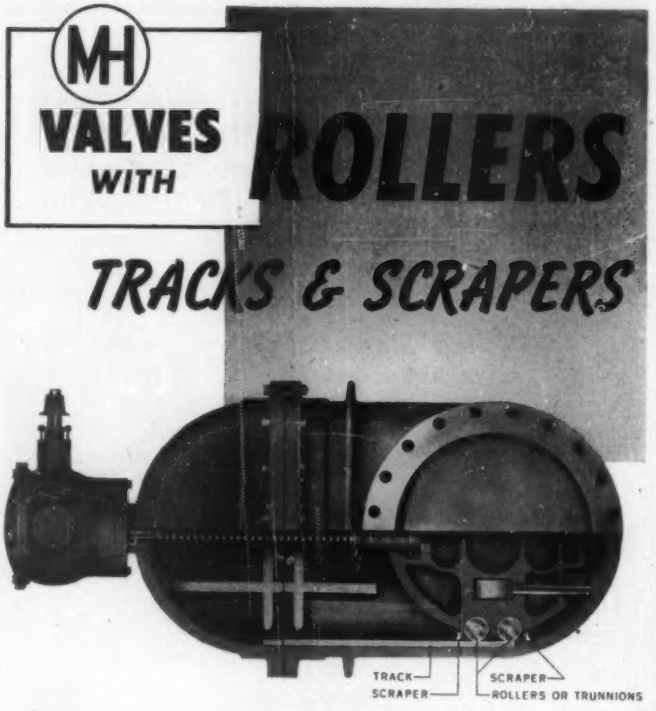
Tractor Loaders

The Wagner Iron Works, 1905 S. First St., Milwaukee 1, Wis., announces availability of its new Wagner loaders for the Farmall Super "C" and International "A" tractors.

The manufacturer states that its hydraulic loader is precision engineered and built especially for use with International tractors providing a maximum range of uses through a full complement of available attachments. Chrome-plated cylinder rams prevent corrosion and excessive packing wear, and there is positive control of attachments at all times.

Attachments include: the backfill

blade for grading, backfilling; reversible snow plow, designed for clearing sidewalks; crane lift controlled by third cylinder, and fork lift, which lifts, carries, and stacks, material bucket and manure fork.



Easy operating

To avoid undue wear of moving parts when installed in horizontal position, large size M & H double disc gate valves may be ordered equipped with rollers or, rollers, tracks and scrapers. This is recommended when large valves are installed on their side and the heavy weight of the gate assembly creates a drag on the underside where it rests on the body. Rollers, tracks and scrapers make the heavy gate assembly easy to open and close, reduces wear and possible damage to the disc rings or the seat rings. For complete information, write or wire M & H Valve and Fittings Company, Anniston, Alabama.

M&H PRODUCTS Everywhere

Universal Concrete Pipe Has New Plant in Florence, Ala.

The Universal Concrete Pipe Co., 297 S. High St., Columbus 15, Ohio, reports that it has made it an even "two dozen" by opening a new plant at the south end of Court Street in Florence, Ala. This brings the company's network to 24 plants in 10 states.

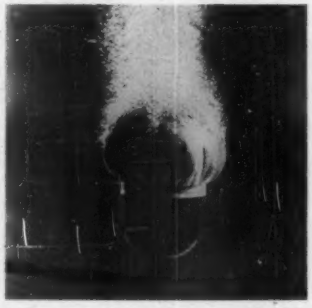
The Florence installation will be under the supervision of A. E. Morris, Decatur, Ala. It will make pipe in sizes of 4, 6, and 8 inches. Larger sizes of pipe will be shipped in from the Decatur plant and stocked at the Florence yard.

John Harris, Florida district sales manager for the Universal Concrete Pipe Co., has been elected secretary and a director of the Southeastern Concrete Pipe Association.

Air Diffuser for Water And Sewage Treatment

A new type of equipment for diffusing air or other gas into water or sewage has been announced by Infilco Incorporated of Tucson, Ariz. Called the Colaflex Diffuser, it is a flexible, collapsible device, which the manufacturer states, maintains practically constant permeability for fine diffusion of air or gas in sewage and industrial waste treatment, or water conditioning.

The diffusing element is of fabric. Gas or air under pressure inflates the element to an erect, distended position, and diffuses through the flexible fabric to the liquid. According to Infilco, the fabric is cleaned by shutting off the gas or air supply by means of the 3-way valve with which the system is provided. The gas or air is suddenly vented to atmosphere and the fabric is collapsed by the pressure of the liquid and inverted downward into its cup. This flexing of the walls dislodges or loosens solid particles that may have accumulated in the fabric, and the fabric is kept clean, and its permeability maintained. Several diffuser elements can be connected to a common gas duct or header of any desired pattern within the tank.



A new type of equipment for fine diffusion of air or other gas into a liquid in sewage and industrial waste treatment, water conditioning, biological manufacturing processes, and absorption processes.

New truck-mounted Schield Bantam trench hoe cuts grave digging time for St. Joe Valley Memorial Park Cemetery, South Bend, Ind.

This Trench Hoe Cuts Digging Time

Using a low-cost, truck-mounted Schield Bantam trench hoe, the St. Joe Valley Memorial Park Cemetery of South Bend, Ind, has cut grave-digging time from 8 to 10 man-hours, to an average of 15 minutes for one man on a typical 4¼-cubic yard excavation, reports the Schield Bantam Co., Waverly, Iowa.

According to Ernest A. Joy, owner of the E. A. Joy Excavating Co., of South Bend, the Bantam works in all kinds of weather, breaks through frozen ground easily, and excavates so accurately that no hand shovel trimming is necessary. A 2½-ton capacity crane hoist and special blade for fast, mechanized backfilling can be attached on the job in a few minutes.

Weighing less than 8 tons complete with truck, the Bantam is said to be suited for cemetery and park use because it maneuvers well in close quarters without damage to lawns or ground surface. The manufacturer says that versatility and mobility also enable owners to rent or sub-contract the machine to counties, municipalities, or local contractors for miscellaneous excavating, loading, or materials handling jobs.

Calgon for Clean Wells

The glassy phosphate known as Calgon, applied to a well at the rate of 16 pounds per 100 gallons will remove much of the mineral deposits normally found restricting the flow of water through a well screen. If calcium hypochlorite is added amounting roughly to one-tenth the weight of Calgon used, the iron bacteria and other organic growths will also be removed. These are the findings of John P. Kleber, sales engineer for Calgon, Inc., Pittsburgh 30, Pa.

The chemicals are allowed to remain in the well for 48 hours. During this period, the pump is turned on 10 or 12 times at 4-hour intervals, raising the water level to the ground surface. In large wells, compressed air can provide the agitation. Then the solution is pumped out of the well and the process repeated until the well shows no further improvement.

The process seems most effective when mineral deposits have plugged the well screen, and has shown effectiveness on minerals ordinarily not removed by acid cleaning. The phosphates cause no harm to metal or concrete and are safe to handle. The use of Calgon has also been found to be of considerable benefit in developing new wells, Mr. Kleber reports.

New Eastern Sales Office For Pittsburgh-Des Moines

The Pittsburgh-Des Moines Steel Co., 3412 Neville Island, Pittsburgh, Pa., has announced the opening of an eastern sales office at 1060 Broadway in Newark, N. J. This new headquarters replaces the New York office formerly located at 270 Broadway. H. W. Ford continues as eastern district sales manager.

. . . with a
GREENLEE PIPE PUSHER

Speed jobs with this quick, simple way to install underground pipe. With the GREENLEE *one man* pushes pipe under obstacles . . . no tearing up of pavement, floors, lawn . . . eliminates extensive ditching and tedious backfilling! Two models and special power pump to fit your various jobs. Write for facts today.

GREENLEE

Greenlee Tool Co., 2032 Columbia Ave., Rockford, Ill.

SOIL COMPACTION

For Better, Quicker
STREET REPAIRS

Use BARCO RAMMERS

HERE is a BETTER, QUICKER, CHEAPER way to repair streets when holes or trenches are dug in paved areas. Instead of (1) mounding up the backfill and waiting for it to settle, or (2) using expensive granular replacement fill, do as others are now doing — Use Barco Rammers to get HIGH DEGREE COMPACTION of original backfill *immediately*. No waiting to restore paving! No dangerous bumps or holes left in streets! No expensive "call backs" to work on holes! SAVE WITH BARCO!

ASK FOR DEMONSTRATION

The Barco Rammer is a new tool with many uses! Tamps backfill to 95% compaction at amazingly low cost — Let us show you actual figures. Ask for our nearest distributor to give you a demonstration.

● Send for CATALOG No. 621

BARCO MANUFACTURING COMPANY
1835N Winnemac Ave.,
Chicago 40, Illinois

Builders of Portable Gasoline
HAMMERS and RAMMERS

Bucyrus-Erie Appoints Two New Distributors

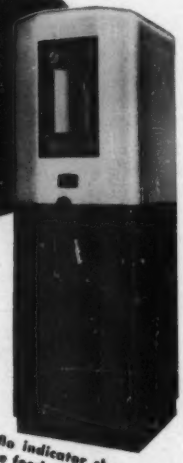
The Ray-Brooks Machinery Co., of Montgomery, Ala., and the Tractor & Equipment Co., Inc., of Birmingham, Ala., have been appointed distributors for the Bucyrus-Erie Co.'s line of ⅜ to 4-yard gasoline, diesel and single motor electric convertible excavators, the 3-ton Hydrocrane, and the recently introduced Hydrohoe, according to an announcement by the manufacturer, the Bucyrus-Erie Co., South Milwaukee, Wis.

Both firms also handle Bucyrus-Erie tractor equipment — bullgraders, bulldozers, dozer-shovels, and scrapers designed for use with International crawler tractors.

Denominator Company Opens Plant in Woodbury, Conn.

The Denominator Co., Inc., manufacturer of tabulating machines, has opened a new plant located on Main Street in Woodbury, Conn. R. C. Morse, sales manager, reports that the New York sales and maintenance office will continue to operate at 261 Broadway, New York, N. Y.

buy with an eye to tomorrow!



People who have switched to BUILDERS Visible Flow CHLORINIZERS are delighted with the performance they get from these chlorine gas feeders. Here are typical comments:

"I haven't had to touch the Chlorinizer for the last six months except to change tanks."

"A glance at the Sightflo indicator shows we're getting the right chlorine feed. With this positive flow rate indicator, Chlorinizers eliminate a lot of guess-work and worry in our plant."

"That chlorine control valve in Builders Chlorinizers is great! I can forget all about it, because I know it's not deteriorating in a bath of corrosive wet chlorine gas."

Chlorinizers are simple, easy to understand. Chlorinizers meter and control chlorine gas in the dry, non-corrosive state. Chlorinizers have a closed chlorine flow line, totally free from stuffing boxes and mechanisms needing frequent attention. Chlorinizers have only one vital control part, the tantalum-diaphragm chlorine valve with its Hastelloy valve pin, silver valve seat, and enameled valve lining.

These are the big values you get in Builders Chlorinizers . . . and they're sure to save you maintenance for years to come. Chlorinizers are available in three volumetric models — for any chlorination service:

Up to 400 lbs./day . . . Model DVSX . . . Bulletin 840-F2A
Up to 2000 lbs./day . . . Model CVS . . . Bulletin 840-F1
Up to 6000 lbs./day . . . Model HCVS . . . Bulletin 840-G27

For Bulletins, address Builders-Providence, Inc. (Division of Builders Iron Foundry), 358 Harris Ave., Providence 1, R. I.

BUILDERS PROVIDENCE Instruments

BIF INDUSTRIES — BUILDERS

Promotions at Onan

G. R. Burda E. C. Swenson

Hiram Hascall, sales manager of D. W. Onan & Sons, 7644 University Ave., Minneapolis 14, Minn., manufacturer of electric generating plants, reports the appointment of George R. Burda as sales promotion manager. With the company since February 1942, Mr. Burda had been manager of the eastern United States sales territory.

Edwin C. Swenson of the service department succeeds Mr. Burda as regional manager of the eastern zone. He has been with the concern since January 1941, and for the past several years conducted the Onan Service and Technical School.

Counts and Wraps by Hand

A new coin-handling machine speedily counts and wraps pennies, nickels, and dimes by hand. The device is known as Rap-A-Coin, trade mark registered, and is manufactured and sold nationally and in Canada by Henderize, Inc., 5667 Freeport Boulevard, Sacramento, Calif.

The user simply inserts the tubular wrapper for pennies, nickels or dimes into the end of the tube. Coins are stacked on edge in the tube until it is filled—which gives the user the correct count automatically—and are then zipped into the wrapper with a plunger.

The lady is filling the penny tube that holds just the right number of coins to fill the bank wrapper inserted in the end of the tube. With her left hand she will zip the coins into the wrapper.

District Manager For Mack Motor Truck

John Steinhauer E. M. Young

The appointment of E. M. Young as manager of the Charlotte, N. C., district for the Mack Mfg. Corp., 350 Fifth Ave., New York, N. Y., is announced by E. G. Ewell, vice-president and eastern sales manager.

Replacing Mr. Young as assistant to the southern division manager at Atlanta is John Steinhauer, who, since 1949, has been a salesman in the company's Atlanta territory.

Reflectorized Paint For Highway Lane Marking

This reflectorized stripe can be seen over a quarter of a mile away under auto headlights at night.

The Minnesota Mining and Mfg. Co., 900 Fauquier Ave., St. Paul 6, Minn., reports that it has been granted U. S. patents covering reflectorized paint for highway lane marking. Already in use for highway marking in many of the 48 states, the product is marketed under the trade mark of Centerlite.

The manufacturer states that the reflectorized material is applied like conventional lane marking paint, but lasts three to five times longer, and reflects 300% brighter at night. Under auto headlights at night the reflectorized stripe can be seen over a quarter of a mile away. The material remains considerably brighter than other markings, even under foggy conditions, the company points out.

Centerlite consists of a liquid containing millions of tiny glass spheres which serve as reflex-reflecting lenses. Through wear from auto traffic and weather, the tiny lenses become brightly polished and at night reflect the light from the automobile back to the driver.

El Paso Reports:

"Definitely cuts costs on landfill garbage disposal"

D TOURNAPULL moves 785 cu. yds. garbage . . . 120 yds. dirt blanket per day

TO modernize their garbage disposal, the city of El Paso, Texas, recently purchased an electric-control, rubber-tired D Roadster Tournapull. With addition of dozer blade, their "D" functions as an all-purpose city utility tool. According to Ed. F. Muckelroy, Supt. of Sanitation, "Comparing unit with crawler-tractor, same amount of material can be covered *in half the time*. Unit definitely cuts costs of landfill garbage disposal." Here's how it works:

Dozes, covers on same pass

Refuse is dumped at fill site from trucks. One-man operated Tournapull bull-dozes refuse down slight grade and covers it on same pass. At bottom of grade, "D" self-loads dirt in 7-yard scraper, then spreads it on return. Wide 18.00 x 25 low-pressure tires compact refuse on normal cycle. Simple, fingertip electric switches speed all dozer and scraper operations . . . response is instantaneous.

Fast-moving D Roadster makes profitable use of idle time . . . goes anywhere in city at 28 m.p.h. to handle scattered municipal maintenance assignments. Maintains alleys . . . hauls, spreads cinders and gravel surfacing, grades parking lots. Can also plow as well as load and haul snow and ice from city streets. Mobile "D" is always ready to drive at a moment's notice.

Consider how much more work per tax dollar D Tournapull can do for you, then contact your LeTourneau Distributor for all the facts on how you can make your municipal appropriation go further.

TOURNAPULL goes anywhere, fast . . . self-loads, stockpiles, emergency shelters, trenches, water reservoirs, removes rubble, maintains roads, escape routes.

TOURNADOZER moves 10 m.p.h., works 2 to 3 times faster than crawler dozers. Requires no loading or tail-boy trucks at rubber tires can be operated on pavement and block top. Clears roads, dozes debris from disaster areas, gets fire-fighting units through. Pulls, pushes stalled equipment.

Mail today to

R. G. LeTOURNEAU, Inc., Peoria, Il

for complete information on 132 h.p., rubber-tired

D Tournapul

D Tournadoz

NAME

TITLE

DEPARTMENT

CITY, STATE

Tournapull—Tournadozer—
Trademark Reg. U. S. Pat. Off. M67

LETOURNEAU TOURNAPULLS

MORE WORK PER HOUR WITH RUBBER-TIRED POWE

Long Life
EMBOSSED REFLECTORIZED TRAFFIC SIGNS
NO PARKING ANY TIME
WRITE FOR CATALOG
Cataphote Corporation
TOLEDO, OHIO

The California plant of the United States Pipe and Foundry Co.

U. S. Pipe and Foundry Co. Opens Plant in Decoto, Calif.

The California plant of the United State Pipe and Foundry Co., Burlington, N. J., located at Decoto, Alameda County, began operations early in November. The company reports that this marks the first time that cast-iron pressure pipe has been cast centrifugally in metal molds on a production basis in any of the Pacific Coast states.

The plant was designed by the concern's engineering department and constructed by The Austin Co. on a 70-acre tract of land. Among the manufacturing facilities are: storage for pig iron, coke, and limestone; three centrifugal pipe-casting machines; a pipe-annealing oven; two core-blowing machines; a core oven; hydrostatic test press; drilling machine for mechanical joint pipe spinners for lining, and a tunnel for curing cement-lined pipe. There is also a one-story building that houses the plant offices.

For the present, pipe in diameters 4 to 12 inches will be cast. However, provision has been made for future expansion and development of plant facilities. Shipments from this plant will be made principally to the areas included in the company's Pacific Coast sales territory which is supervised by A. Raymond Hausmann, Pacific Coast sales manager, with offices in the Monadnock Building in San Francisco. Other offices reporting to San Francisco are Los Angeles, Seattle, and Honolulu.

Resident manager of the California plant is Clifford R. Tinsley, who was formerly resident manager of the Burlington, N. J., plant. The company's four other plants which manufacture cast-iron pipe and fittings are located in Bessemer and North Birmingham, Ala.; Chattanooga, Tenn., and in Burlington, N. J., where the general offices are also located.

Municipal Engineer WANTED

Qualified by training and substantial experience for consulting work on municipal management problems.

Willing to travel. Give details of training and experience.

Write:

Box 353
The American City
470 Fourth Avenue
New York 16, N. Y.

Indiana Distributor For Koehring Company

The A. F. Deaney Co., 719-721 N. Pine St., Indianapolis, Ind., has been appointed distributor and representative in Indiana for the Koehring Co., 3026 W. Concordia Ave., Milwaukee 10, Wis., and will handle the complete Koehring line of heavy-duty construction equipment. Besides Koehring products, the Deaney firm also represents the C. S. Johnson Co., of Champaign, Ill., and the Parsons Co. of Newton, Ia., Koehring subsidiaries. A. P. Deaney is president of the organization, and Ralph Riddle, is in charge of sales.

In adding the complete Koehring line, these modern construction equipment units will be included: Koehring excavators, cranes, draglines, Dumptor, pavers, finishers, Mud-Jacks, and construction mixers; Johnson aggregate and cement plants, batchers, bins, storage silos, clamshell and concrete buckets, and Parsons crawler and rubber-mounted Trenchliners for trench excavation.

Elected Graybar Treasurer

A. H. Nicoll, president of the Graybar Electric Co., Inc., 420 Lexington Ave., New York, N. Y., announces that F. E. Gibson has been elected treasurer, with headquarters in the executive offices in New York. He had been district credit manager at Chicago.

Mr. Gibson joined Graybar in May 1920 as a service and claims clerk. He was made credit manager in April 1932, and was transferred to Chicago in May 1946 as district credit manager.

Hays' Field Representatives

B. L. Anderson L. R. Butler

Leon R. Butler and Byron L. Anderson have been appointed new field representatives for the Hays Mfg. Co. of Erie, Pa.

Mr. Butler's territory will include Louisiana, Mississippi, and Tennessee. He succeeds Guy Ashworth, who resigned.

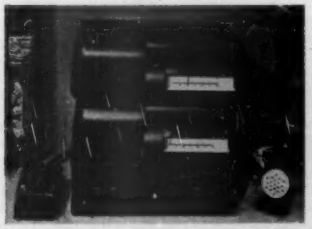
Mr. Anderson will represent the company in Indiana and Illinois.

Continuous Recorder for Municipal Signal Monitoring

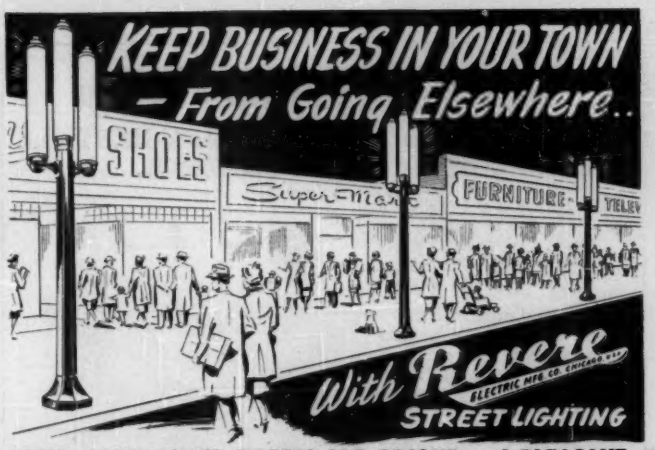
A new lightweight continuous recording machine for use in municipal police headquarters, fire alarm bureaus, and flight control towers, is announced by the Dictaphone Corp., 420 Lexington Ave., New York 17, N. Y. Known as the Dictaphone Dictacord Continuous Recorder, the machine automatically monitors voice radio communications, police call boxes, fire and police emergency telephone calls, and air-ground radio communications.

Portable and weighing 45 pounds, the machine records on a seamless plastic belt, the Dictabelt. Two of these are inserted simultaneously, the device automatically switching from one to the other to provide a full hour of continuous recording.

High-fidelity recording insures that every word is repeated exactly as spoken, reports the manufacturer. Through this system a permanent record of all verbal reports made through police call boxes is instantly available. As an adjunct to the detective squad, it may be used to record interrogation of suspects, cell-block conversations, interviews, and investigation reports. It can also assist the fire department in apprehending arsonists.



The Dictaphone Dictacord Continuous Recorder, which automatically monitors voice radio communications, police call boxes, fire and police emergency telephone calls, and air-ground radio communications.



WHEN HOME TOWN STREETS ARE BRIGHT and PLEASANT—

it means that people do their shopping there instead of responding to the lure of a better lighted neighboring town. Well-planned street lighting transforms "just another town" to a sparkling business center. REVERE White-Way Pylon-Lites along the shopping district will work miracles in drawing crowds. They also do a wonderful job in residential areas. It will pay you to sponsor Street Lighting improvements. You'll please your merchants with the effect on business and the public will be grateful too, because well-lighted residential streets cut down accidents and curb crime and vandalism. REVERE can take care of all of your municipal lighting needs, and will gladly help you plan improvements on any scale. Write for complete data on Street Lighting.

Full Line of LUMINAIRES for Incandescent or Mercury Lamps.
WHITE-WAY PYLON-LITES
VIADUCT LIGHT
Flush mounts into walls to throw beam directly on road or passageway. Provided with Guard and Lock.
HINGED STREET LIGHTING POLES
Do away with costly maintenance. Safest servicing.
FINISHING RINGS FOR SYLVANIA SEALED BEAM LAMPS
Write For Literature

PROTECTIVE — PLAY GROUND — SPORTS LIGHTING

REVERE ELECTRIC MFG. CO.

6015 BROADWAY — *Indoor and Outdoor Lighting Equipment for Every Need* — CHICAGO 40, ILL.

5 REASONS *Why*

The *"Scotchman"* Salt Spreader is BEST for Positive ICE and SNOW CONTROL

1. "Scotchman" applies salt UNIFORMLY—even "bird-shot" melting pattern SAVES up to 50% in salt alone.
2. "Scotchman" is SELF-LEVELING — spread bulk salt from elevated dump truck ***without shoveling.***
3. "Scotchman" is ADJUSTABLE for height.
4. "Scotchman" HAS MORE STAINLESS STEEL in its construction.

5. "Scotchman" ENGINE and ENGINE CONTROLS are completely protected and OPERATE IN FILTERED AIR.

Read Salt-Use Article page 171, This Issue

See a Demonstration—JUDGE for YOURSELF

TARRANT MFG. CO., East Ave., Saratoga Springs, N. Y.

FIRE FIGHTING'S UP-TO-DATE IN KANSAS CITY

"The Kansas City Fire Patrol Department have used Shuredry Salvage Covers during the past thirty years. During that time many thousands of dollars involved in valuable stocks, merchandise, and machinery have been saved from water damage during fires, and sprinkler system operations."

SAYS CHIEF W. H. GARDNER, KANSAS CITY FIRE PATROL

FULTON *Shuredry* ON THE JOB

Shuredry Salvage Crews everywhere are saving fire victims thousands of dollars with Fulton's Shuredry Green-Bak Salvage Covers. Approved by National Board of Fire Underwriters and by Factory Mutual Laboratories, Fulton Shuredry tops every test for water penetration and seepage, is pliable and easy to handle. Specify *Shuredry* on your next order to your fire equipment dealer. ***Use Fulton Triple-strength Tarps of a 1,000 uses—for garbage truck covers and protection of equipment and supplies exposed to weather.***

***Fulton* BAG & COTTON MILLS**

ATLANTA • ST. LOUIS • DALLAS • DENVER
KANSAS CITY, KANS. • MINNEAPOLIS • NEW ORLEANS
LOS ANGELES • NEW YORK CITY • WINTER HAVEN, FLA.

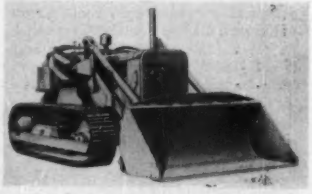
Street Commissioners Report Big Savings With Rock Salt

According to a survey made by the Bureau of Public Roads, the cost of street and highway maintenance has doubled since 1940. Rising costs and an increase in population have necessitated more maintenance work for the street departments in municipalities throughout the country.

The bureau points out that standards of street and highway maintenance have also risen considerably in the past few years, and that standards and practices of snow and ice removal have changed completely. Present-day use of coarse rock salt to effect complete removal now enables commissioners to keep streets snow-free all winter long, in contrast to the ice-rutted surfaces that used to be common when cinders, sand, and similar abrasives were used.

According to a survey made by the International Salt Co., Inc., Scranton 2, Pa., many commissioners regularly cut snow and ice removal budgets as much as 50% with coarse rock salt, and do a faster, cleaner job, keeping their streets open around the clock, in spite of the weather. The street commissioners report that rock salt is less expensive because it can be spread more quickly, and a ton of it covers more street surface than a ton of abrasives. In addition, a great deal of time is saved in applying 3 loads of rock salt rather than 15 loads of abrasives. Another money-saving advantage is that only one application of coarse rock salt is needed to remove snow and ice, while abrasives, on the other hand, have to be applied repeatedly, and after the storm ends, have to be plowed and hauled away. Street commissioners report that with rock salt they can keep traffic moving and maintain high standards of safety and cleanliness.

Shovel-Mounted Tractors



A complete line of shovel-mounted tractors, with standard bucket capacities up to 4 yards (light material buckets up to 7 yards) is now available for all four models of Allis-Chalmers crawler-tractors, according to a joint announcement by the Tractomotive Corp., Deerfield, Ill., and the Allis-Chalmers Mfg. Co., Milwaukee 1, Wis. The new Tracto-Shovel units are multi-utility machines, can be maneuvered in confined areas, and are easily transported from one job to another. Tractomotive has made available for most models a variety of interchangeable attachments, including bulldozer blades, to increase the versatility of these units.

G. R. Hanks is President of American-LaFrance-Foamite

G. R. Hanks W. M. Price

George R. Hanks has been elected president of the American-LaFrance-Foamite Corp., Elmira, N. Y., manufacturer of fire apparatus and fire-fighting equipment. He succeeds the late Edward E. O'Neill, who relinquished the presidency a few weeks before his death on Nov. 11, after a long illness. Mr. O'Neill remained with the company as a director until his death.

Mr. Hanks has been a company director for several years, and since November 1950, served as executive committee chairman in charge of operations. In August 1915 he was employed by the Taylor-Wharton Iron & Steel Co., High Bridge, N. J., in 1929 became president, serving for 21 years, and now is executive committee chairman. Mr. Hanks was president of the Linn Mfg. Co., Morris, N. Y., for several years.

Elected executive vice-president of American-LaFrance-Foamite was Wilfred M. Price, who will continue in direct charge of engineering, manufacturing, and procurement and inventory control. He joined the Foamite Childs Co., Utica, N. Y., as a cadet engineer in 1927, and eventually became sales promotional manager, and assistant to the president. In 1946 he was elected vice-president and a director of the company.

Also announced was the resignation of Edward D. Herrick as an officer and director. Other personnel changes include: the appointment of Alexander G. Long as vice-president in charge of manufacturing; Francis A. Rauh, factory manager of the local company; Bernard Smith as plant superintendent, and Charles A. Emerich, in charge of procurement and inventory control.

Fairbanks, Morse Reports Increase in Shipments

Orders and shipments of Fairbanks, Morse & Co., 600 S. Michigan Ave., Chicago 5, Ill., for the first nine months of 1951 were greater than a year ago and approached new high marks, it is reported by Robert H. Morse, Jr., president.

He states that orders for the first nine months of this year totaled $98,600,000 and were $21,200,000, or 27.4% greater than the $77,400,000 reported for the same 1950 period. Shipments were $85,200,000. This is $27,700,000, or 48% in excess of the $57,500,000 shown for the same months last year.

A. P. Smith Appointments

The A. P. Smith Mfg. Co., East Orange, N. J., announces the retirement of J. L. Atwell, and the appointment of Ted H. Kain and Daniel S. Vetromile to its sales staff.

Mr. Atwell, who retires on Dec. 31st, has represented the company in Pennsylvania and Ohio for many years.

Mr. Kain, former general manager of the Columbia Pennsylvania Water Co., will work with Mr. Atwell, whom he will succeed. Mr. Kain is a past president of the Pennsylvania Section of the American Water Works Association.

T. H. Kain D. S. Vetromile

Formerly with the Rockwell Mfg. Co. and the De Vilbiss Co., Mr. Vetromile will represent the A. P. Smith Mfg. Co. in New York and New Jersey.

HURRICANE FLUSH

Gives this Streamlined

STANDARD STEEL FLUSHER

MORE CLEANSING POWER

Carries a Heavy Load with a Powerful Flush!

It takes a powerful flush to sweep dirt and dust into gutters and sewers. Mere wetting of streets is not enough. Standard Steel equipment is built to supply a full 50 pounds pressure on each nozzle. They carry a heavy load — reloading is quickly accomplished — ease of operating this type flusher is well known to every city using Standard Steel Flushers. Embodying every new mechanical feature, styled for beauty, they reflect the progressive spirit of any city. For Complete Details, Write for Catalog.

OTHER PRODUCTS

Asphalt Pressure Distributors, Maintenance Distributors, Tar Kettles, Patch Rollers, Supply Tanks, Tool Heaters, Asphalt Tools, Construction Brooms.

Built to the Highest Standard

Standard Steel Works NORTH KANSAS CITY, MO

Now all Philadelphia firemen get 2-way radio coverage from either the main station or the new auxiliary station.

Does your city need this protection?

New auxiliary station operates four 250-watt transmitters, two channels for police, two for fire.

Two easy-to-operate consoles route calls to fire and police apparatus all over Philadelphia.

New Philadelphia 2-way radio center controls police, fire, civil defense. Provides radio coverage for any emergency.

New station remote from downtown area

Philadelphia is a *safer* city now, thanks to a new RCA 2-way radio center recently established in West Philadelphia, four miles from the heart of the city. Acting as an auxiliary to the main control center at City Hall, this new installation will provide *emergency* 2-way communications with mobile police and fire units. It will also serve as control center for civil defense.

Two-station coverage gives double protection

Both the main station and this new auxiliary station operate on the same frequency. If one fails, the other takes over. So Philadelphia is assured of *extra* safety in emergencies. It's all typical of RCA 2-way radio at work . . . making things safer and more efficient wherever it's used.

Is your city protected by 2-way radio?

Radio coverage of police, fire, and emergency vehicles is almost mandatory in these troubled times. And even in day-to-day operations, it can quickly save your taxpayers far more than it costs.

RCA radio easy to install-operate-maintain

Look into RCA radio for 2-way coverage in *your* city. Mobile units are compact, lightweight . . . easy to install and maintain. Performance exceeds FCC requirements. Designed and backed by RCA, world leader in radio. Nation-wide service available through RCA Service Company.

Get full story for your city—now

RCA Engineering Products
Dept. 4X
Camden, N. J.

Please send me your big, new, free, illustrated booklet, "RCA 2-way Radio for Public Safety."

Name_____

Position_____

Address_____

City_____ State_____

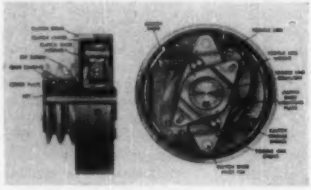
RCA RADIO CORPORATION of AMERICA

New Automatic Clutch For 7 to 15-hp Engines

A new and different type of automatic clutch in its Tog-o-loc Series is reported by the Salsbury Corp., 1161 E. Florence Ave., Los Angeles 1, Calif. Designed for operation on any 7 to 15-hp engine with a 1⅛, 1-7/16, or 1½-inch standard shaft, the clutch has a normal engagement speed from 11 to 1200 rpm, but disengages at as low as 800 rpm.

The manufacturer states that this wide differential in engagement and disengagement speeds is made possible by the exclusive Salsbury Tog-o-loc mechanism—a linkage connecting heel and toe of the two opposing shoes. This toggle lock is centrifugally actuated and equalized on both the pick-up and the release of the load. Both clutch drum and pulley assembly ride free on dual ball bearings during the idling periods.

All models in the Tog-o-loc Series have hub bores mating with standard engine shafts, without necessity for any extension, grinding, boring, or slotting. They are available in two types: with standard-size pulleys with single and double grooves, or with plain hubs onto which special-service pulleys may be mounted.



New automatic clutch has a normal engagement speed from 11 to 1200 rpm.

Cots and Stretchers For Civil Defense

Cots and stretchers for civil defense are produced by The Bomgardner Mfg. Co., 1384 Hird St., Cleveland 7, Ohio.

Among the features of the Mid-Century chair-cot are: the recessed bed of strip aluminum, which holds mattress and bedding in place, and lowers riding height of patient without narrowing the cot frame to inconvenient proportions; streamlined telescoping carrying bars which are in a position that insures the head being elevated above the level of the feet while being carried in a flat posture, and the arm-rail clamps that are accurately machined, with tapered latch pins which lock automatically and will not become loose and rattle.

All cots, with two exceptions, are available in 20 and 22-inch widths, and bed height is governed by the type of wheel that is selected. One type of bed is fabricated from strip aluminum and is quite rigid, while the other is fabricated from flat wire which is suspended from the cot frame by means of 32 helical springs.

This shows the Model 03 heater with a hood covering 108 square feet. Models are available with heads as large as 161 square feet that will fit this machine.

This street was slated for reconstruction in 1948. However, after heating, planing, and grooving, it has served well and probably will be maintenance-free for a few years more.

Low-Cost Pavement Renewer

Any asphalt street that has become a maintenance problem and that threatens to develop into a costly construction project can be put back into serviceable condition at nominal cost for 8 to 10 years, simply by planing the surface smooth, removing the old "slick" and seal-coating it, according to the Asphalt Highway and Surface Heating Co., 1055 Victory Place, Burbank, Calif.

This concern's surface heater was invented by the company president, C. W. Sowell. Although it is a large machine, nevertheless, because of its hydraulic rear-wheel steering and hood shift, it is able to maneuver into difficult places and around returns with ease. The company believes that its Model 03 asphalt highway surface heater is the largest on the market today. It has a heating area of 108 to 161 square feet and attains a heat in excess of 2,200° with a maximum fuel consumption of approximately 4½ gallons of diesel fuel per burner per hour. It is reported capable of heating and planing in excess of 150,000 square feet per 8 hours.

The machine is hydraulically controlled and is one-man operated. Mr. Sowell recommends that at least ¼ inch of the asphalt surface be removed on any street to be paved or seal-coated, if only to smooth and remove the old "slick" and open the pores, thus assuring a perfect bond between the old and new pavements. He points out, furthermore, that by being able to remove the surface of a street without disturbing the established traffic-packed base, a more stable and long-lasting result will be achieved.

The surface heating can be conducted without closing the street to traffic.

Graybar Electric President Marks 40th Anniversary

A. H. Nicoll, president of the Graybar Electric Co., Inc., 420 Lexington Ave., New York, N. Y., was honored by members of his staff on the occasion of his 40th service anniversary at a dinner held Nov. 15th at New York City's Union League Club.

Mr. Nicoll began his career on Nov. 15, 1911, as a sales record clerk in San Francisco. He became a salesman and eventually headed the district in which he started. In 1939 he located in the East as assistant to the president and was elected president in 1942.

Since he assumed the presidency, the company's annual sales have tripled to nearly 400 million dollars.

Winko-Matic alternate-flasher signal

attracts motorist's instant attention!

Self-contained, alternating flashers, visible at least a mile, command driver's obedience to the message, on your sign . . . day or night . . . in fog, snow, rain.

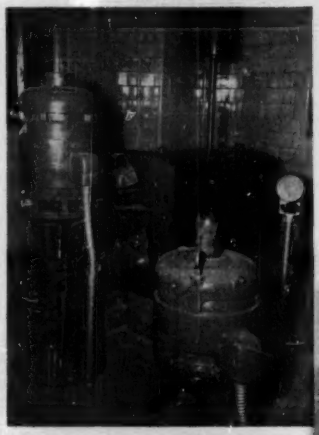
Best By Obedience Test

For complete details on activating your own signs, easy installation, minimum maintenance,

Write for Bulletin No. 101

Winko-Matic Signal Co.
750 Broadway Lorain, Ohio

The DRIVE
that assures you
continuous sewage service



JOHNSON
Right Angle
GEAR DRIVE
for Sewage Applications

HEALTH PROTECTION . . . Dependable for continuous 24 hour constant service.

AVAILABLE . . . Manufactured in sizes, types and ratios to meet varied applications.

DEPENDABILITY . . . High efficiency and all-weather service. Low operating cost.

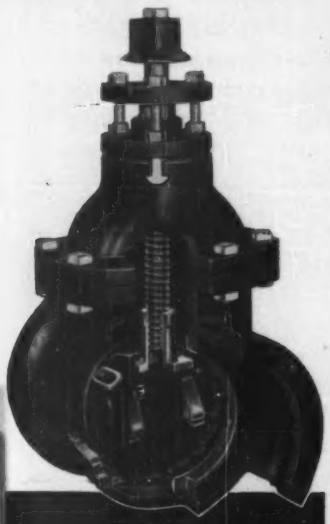
WORLD WIDE ACCEPTANCE . . . In recognition of dependable service, economy of operation and maintenance. Hundreds now in use by municipalities.

INVESTIGATE NOW . . . Get the facts on the Johnson Right Angle Gear Drive. Send for illustrated catalog.

PHOTO: Type 3 — automatic dry pit municipal sewage installation at Stratford, Connecticut—electric motor or engine drive.

JOHNSON GEAR
AND MANUFACTURING CO.
"45 years of Engineering Service"
8th & Parker Streets • Berkeley 10, Calif.

IOWA valves



Simple . . .
rugged construction

MEET ENGINEERS RIGID 3 POINT SPECIFICATIONS

1 Solid bronze Wedges
are placed loosely in two iron hooks which permit the wedging surfaces of the wedges to be at different angles with the wedges cast on the valve discs. *Solid bronze stem nut* is loose and independent of the gates and wedges, thus preventing binding or springing of the spindle or freezing of the gates.

2 All Working Parts
are bronze or *bronze mounted* to safeguard against corrosion as well as to permit free and positive operation both in wedging the gates into contact with the seats and in releasing them.

3 Iowa Valves
exceed A.W.W.A specifications and meet engineers choice for a quality product.

IOWA VALVE COMPANY
201-299 N. Talman Ave., Chicago 80, Illinois
A subsidiary of James B. Clow & Sons

The new main plant and offices in Los Angeles of the Layne & Bowler Corp., manufacturer of deep-well turbine water pumps.

Layne & Bowler Opens Plant in Los Angeles

The Layne & Bowler Corp., pioneer firm in the deep-well pump field, announces the opening of new offices and plant at 2943 Vail Ave., Los Angeles 22, Calif. E. C. Wagner, president of the concern, believes the new factory to be the largest of its kind in the world for the exclusive manufacture of deep-well turbine pumps.

Features of the new plant include an over-all area twice the size of the former site, reinforced concrete buildings, and special pipe handling machinery. There also is a continuous manufacturing and assembly line for shaft-enclosing tube and line-shaft assembly in which raw material is fed directly into the line and processed steadily to completion, and placed in stock racks ready for shipment.

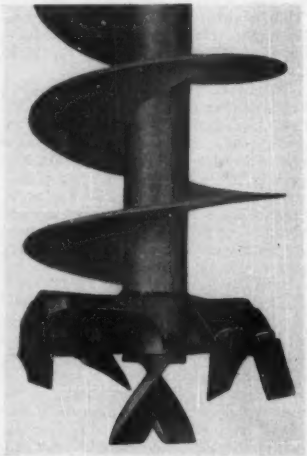
New Cutting Head For Earth Drill

A new cutting head for welding onto any continuous helix-type earth drill or post-hole auger is now in production by the Petersen Engrg. Co., Santa Clara, Calif. Designated as the Pengo cutting head, the new unit is of twin helix design. It replaces the conventional cutting head by means of directly welding to the bottom of any continuous helix auger.

The manufacturer reports that its product will work favorably under any kind of ground conditions, but its main features are that it makes it possible to bore holes under adverse conditions with machines using the continuous helix auger, where formerly only the heavier- type machines were capable of boring.

The cutting teeth are arranged in the same staggered pattern as provided on the company's regular heavy-duty twin helix Pengo earth auger employed by power and telephone companies. All Pengo cutting-head parts are standard and are interchangeable with the standard Pengo earth auger of the same size, including the shank plates, replaceable points, and the fishtail pilot bits. Pengo cutting heads are available in eight sizes, ranging from 10 to 24 inches in diameter.

For further information about this equipment, write to the Petersen Engrg. Co.



This new cutting head bores holes under adverse conditions with machines using the continuous helix auger, where formerly only the heavier-type machines were capable of boring, reports the Petersen Engrg. Co., Santa Clara, Calif.

THERE'S A FORTUNE BURIED UNDER MAIN STREET

Every city, town, village where sewer pipe, water or gas lines are laid has buried thousands of dollars under the ground. It's buried treasure . . . easy to locate but of value *only* if it has the proper crushing, beam, shock and bursting strength properties.

Cast Iron Pipe serves for centuries.

•

Figures prove it . . . so does the pipe itself! Warren has it available in sizes from 2 inches to 84 inches.

•

SEND FOR PRICES AND SPECIFICATIONS

Warren FOUNDRY & PIPE CORP

A powerful tone is produced by this new coaster siren.

New Coaster Siren For Emergency Vehicles

Federal Enterprises, Inc., Signal Division, 8756 S. State St., Chicago 19, Ill., reports a new coaster siren for emergency vehicles, which it describes as having the most powerful tone of any siren on the market. The "Q" class is powered by a new motor which produces a greater volume of sound with less current than many smaller sirens.

The Federal "Q" siren is available in two models. The "Q-2" is streamlined, with chrome-plated housing for outside mounting, and the "Q-1" for underhood or behind radiator-grille mounting. Electric brake is optional at extra cost and 6 or 12-volt models are optional. A standard bracket for mounting on any flat surface is included in the price.

New Safety Record Sign

The Industrial Products Co., 2968 N. 4th St., Philadelphia 33, Pa., announces a new safety record sign which is designed to serve as a constant reminder of days worked without a lost-time injury. According to the manufacturer, its product makes for a well-informed organization, maintains daily interest, and gives each employee a sense of responsibility.

The IPCO safety scoreboard is 20 inches wide by 30 inches high, large enough to be seen at a distance. Finished with a green background and white letters, it features two blackboard finish panels enclosing the word "days" so that it may be kept up-to-date by marking in with chalk.

This safety scoreboard is a constant reminder of days worked without a lost-time injury.

Steel Tape Rule

The new Carlson Big Chief steel tape rule is wider, more rigid, and more useful, reports the manufacturer, Carlson & Sullivan, Inc. of Monrovia, Calif. It is the latest addition to the line of Carlson rules produced by the company.

The Big Chief features a ¾-inch wide white-face blade 10 feet long. The extra rigidity of the ¾-inch wide blade permits full 10-foot overhead extension without support for those long, overhead, and reach-in measurements.

Another feature is the Carlson 10-second blade change, which permits replacement of accidentally damaged blades at about one-half the cost of a new rule. The Swing Tip allows the tip to rotate to one side to permit accurate inside, butt-end, and depth measurements. With its wider and longer blade, the steel tape rule weighs 6 ounces and the case fits into the pocket.

A New Protective Coatings Series for *Elevated Working Temperatures*

The new Pitt Chem 600 Series of baked Epoxy Coatings provides you with an improved and specialized weapon for combating industrial corrosion. Effective for many applications involving elevated temperatures, Pitt Chem Epoxy Coatings offer these important advantages:

✓ *Excellent Flexibility*
✓ *Outstanding Alkali Resistance*
✓ *Toughness—High Mar Resistance*
✓ *Good General Chemical Resistance*

Send for Additional Information on PITT CHEM **EPOXY** *Today!*

★ Hot Applied Tar Base Coatings
★ Cold Applied Tar Base Coatings
★ Alkyd Coatings
★ Chlorinated Rubber Coatings
★ Vinyl Coatings
★ Phenolic Coatings
★ Epoxy Coatings

WAD 3625

Protective Coatings Division
PITTSBURGH
COKE & CHEMICAL CO.
GRANT BUILDING • PITTSBURGH 19, PA.

COAL CHEMICALS • AGRICULTURAL CHEMICALS • PROTECTIVE COATINGS • PLASTICIZERS • ACTIVATED CARBON • COKE • CEMENT • PIG IRON

New Small Submersible Pump

The BJ Subette pump, produced by the Byron Jackson Co., is a small submersible pump designed for small capacities at high heads from wells of 6 inches inside diameter or larger. This pump has a capacity range of from 30 to 130 gpm at heads of from 80 to 770 feet. The motors, available in sizes of 5, 7½, 10, and 15 hp, are 3-phase, 60-cycle, 2-pole, 220/440 volt. Fifty-cycle motors are available. All motors are oil-filled, mechanically sealed, and operate completely submerged in water.

The manufacturer reports among the features of this pump are that it entirely eliminates the alignment and bearing protection problems of shaft-type installations, the number of moving parts is reduced to a minimum, and precision factory assembly of the unit eliminates field adjustments. It is employed by plants, municipalities, irrigation, and domestic pressure systems, and may be obtained in four motor sizes.

Bulletin No. 51-5300, describing the Subette, may be obtained by writing to the Byron Jackson Co., P. O. Box 2017 Terminal Annex, Los Angeles 54, Calif.

Designed for small capacities at high heads from wells of 6 inches inside diameter or larger is this new submersible pump.

a protected installation

A protection case of superior "Sand-Spun" cast iron and protection case cap surround the Mathews removable barrel, which contains all the working parts. These act as insulation against ground heaves—prevent strain on the bottom pipe joint. And if the hydrant is knocked down by a 10 ton truck, 9 times out of 10 the protection case and cap permit substitution of a new barrel without excavation.

MATHEWS HYDRANTS

Made by R. D. Wood Company

Public Ledger Building, Independence Square Philadelphia 5, Pa.

Manufacturers of "Sand-Spun" Pipe (centrifugally cast in sand molds) and R. D. Wood Gate Valves

Mathews Modernized Hydrants offer these advantages

Compression-type valve prevents flooding • Head turns 360° • Replaceable head • Nozzle levels easily raised or lowered without excavating • Nozzle sections easily changed • Operating thread only part to be lubricated • A modern barrel makes an old Mathews good as new • Available with mechanical joint pipe connections

Appoints Factory Manager

James B. McClellan, who has been appointed factory manager of the Standard Steel Corp., Los Angeles 11, Calif., brings to his new position an extensive background in heavy machinery that qualifies him for his duties in the manufacture of rotary dryers, asphalt plants, sugar machinery and fish processing equipment—principal products of Standard Steel Corp.

J. B. McClellan

Born in Ogden, Utah, Mr. McClellan has been continuously associated with heavy metal fabrication in western and southwestern industry since World War I.

British Catch-Basin Cleaner

Attracting its share of attention at the Detroit Congress of the American Public Works Association was this British catch-basin cleaner. It is known as the Karrier cleaner and is being distributed by Rootes Motors, Inc., 2711 Bridge Plaza North, Long Island City 1, N. Y. It is equipped with attachments that allow it to flush streets also.

Heil Co. Representative

The appointment of Charles T. Scott as special sales representative in the Chicago area for The Heil Co., Milwaukee 1, Wis., is announced by Joseph F. Heil, president.

C. T. Scott

The company manufactures earth-moving equipment, truck bodies and hoists, petroleum transport tanks, milk transport and storage tanks, milk and beverage bottle washers, agricultural and industrial dehydrators.

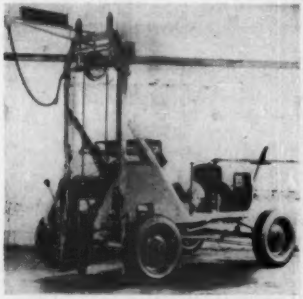
Manages Mack Mfg. Co.'s Fire Apparatus Division

H. W. Dodge, executive vice-president of the Mack Mfg. Corp., 350 Fifth Ave., New York, N. Y., reports that F. E. James has been named manager of the Fire Apparatus Division.

F. E. James

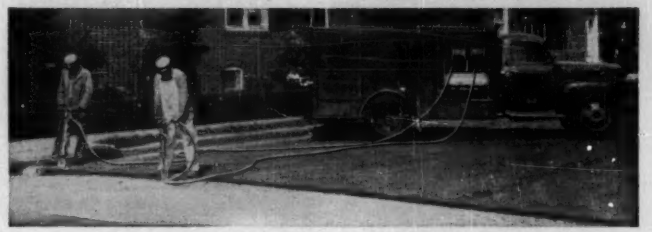
With the company since 1926, Mr. James has served as draftsman, squad leader, bus and truck development engineer and chief draftsman for fire apparatus engineering.

Power Sewer Cleaner



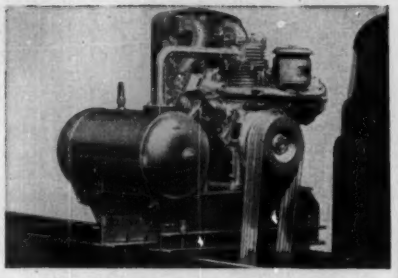
Reinforced tubular steel axles, three heavy-duty semi-elliptic springs, heavy-duty hydraulically operated Jack Legs, and an overnight cable drum are among the features of this OK Champion sewer cleaner, produced by the Champion Corp., 4716 Sheffield Ave., Hammond, Ind. The company states that its equipment takes dirt from the sewer line to the street in one operation. All models are equipped with a positive instant acting safety clutch that is integrally connected to the engine clutch. A news story on this machine appeared on page 179 of the November issue.

Costs $950 to $1000 less to buy and 50% less to maintain than trailer compressors



Jaeger truck-powered "Travel-Air"

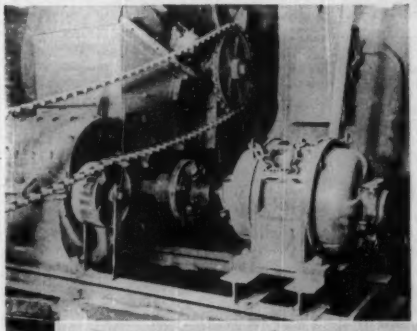
Delivers 125 cfm at 100 psi—enough air to run 2 heavy breakers at full pressure—when truck engine is running at easy 1750 rpm. Simple power take-off is controlled in cab. Engine speed automatically regulated by air demand. 2-stage, air-cooled, force feed lubricated compressor unit.



Easily installed on Ford, Dodge, International, GMC, Chevrolet 1½ and 2 ton rated, long wheelbase trucks.

Sold, serviced by distributors in 130 cities. Send for Catalog TC-1.

THE JAEGER MACHINE COMPANY, 505 Dublin Avenue, Columbus 16, Ohio



"SINCE 1885"

GRUENDLER SLUDGE GRINDER and FEEDER *making profitable* **COMMERCIAL FERTILIZERS for City of TOLEDO, OHIO**

CITY OF TOLEDO, OHIO, SEWAGE DRYING BEDS UNDER GLASS, COVERING AREA OF OVER 34 ACRES

More and more, Municipal Sewage Treatment Plants are employing *Gruendler Sewage Shredders* for sanitary trouble-free Bar Screen Operation and *Gruendler Dry Sludge Grinders* for making commercial fertilizers.

WRITE FOR ILLUSTRATED BULLETIN SG10-AC

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The graphic story of how Jack Ammann services can help you.

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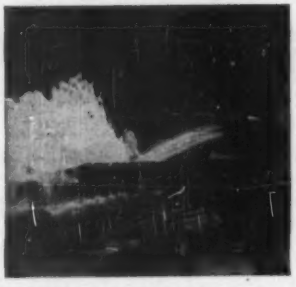
WATER COSTS GO DOWN when you install CAISSON WELLS

Caisson Well means:
LIFELONG INSTALLATION
and LOW WATER COST

Would you believe that water can now be produced at a cost of less than 2 cents per 1,000 gallons, including pumping, operation, maintenance and amortization?

LET US PROVE IT TO YOU



CAISSON WELLS, INC.
Ground Water Engineers and Contractors
33 W. 42nd St., New York 18, N. Y.

One continuous length of 1,100 feet of steel rod is used in this sewer - cleaning machine, eliminating coupling of sections.

Machine Rods and Cleans Municipal Sewers, Pipes

The Roto-Rod is a new gasoline-powered machine for rodding and cleaning municipal sewers, drains, pipes, and underground ducts. Manufactured by the Roto-Rooter Corp., 301 University Ave., Des Moines 14, Iowa, it weighs 1,350 pounds, remains in stationary position during operation, is powered by a 6-hp Fairbanks-Morse-Onan gasoline motor, and cleans or rods over 2,000 feet of pipe or duct from one opening by working in both directions.

According to the manufacturer, the razor-sharp steel cutting blades and various end attachments rod and thoroughly clean lines of roots, grease, scale, soda ash, and other debris without unnecessary digging.

Built on a two-wheel trailer with retractable wheels, the Roto-Rod has a spearhead cutter which quickly bores an opening through the most difficult obstructions, spur-type cutter which cleans lines of rock-hard encrustations, and automatic feeder assembly which prevents damage to blade and pipes.

Named Purchasing Agents

The Chicago Pump Co., 2336 Wolfram St., Chicago, Ill., manufacturer of sewage-treatment equipment, announces the appointments of Kenneth L. Holmes as purchasing agent, and E. O. Mitchell as assistant purchasing agent.

Use "GUNITE," For durability and economy

FOR REPAIRING: Reservoirs, Dams, Filter Plants, Sewage Disposal Plants, Tanks, Stadiums, Bridges, Sea Walls, Breakwaters.

FOR LINING: Reservoirs, Swimming Pools, Tunnels, Sewers, Pipe, Concrete, Brick and Steel Tanks, Stacks, Bunkers, Irrigation Ditches

FOR CONSTRUCTING: Prestressed Tanks, Stacks, Piles, Side Walls and Roofs, Steel Encasements.

The proper maintenance and repair of structures is more important now than ever before.

Write for 48-page illustrated booklet showing "GUNITE" at work.

Nationwide operation — Experienced Personnel

PRESSURE CONCRETE COMPANY

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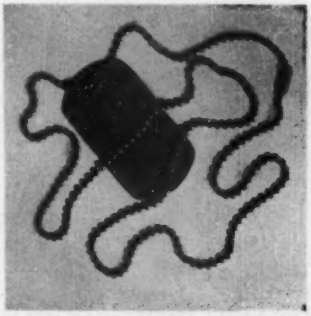
CHICAGO, ILL. 33 No. La Salle Street
FLORENCE, ALA., South Court Street

Identification Necklaces For Civil Defense Use



The flexibility of this identification necklace avoids kinks.

Identification necklaces for civilian use are now being produced by The Bead Chain Mfg. Co., 24 Mountain Grove St., Bridgeport, Conn. The manufacturer reports that its product has already been issued to school children in many cities throughout the country and that New York City has distributed 2,000,000 to students.

According to the company, the necklaces are comfortable, attractive, and economical, and are so flexible that they cannot kink. Although light in weight, they are very strong, and have been accepted as standard by the Armed Forces.

IT STARTED LIKE THIS

When a gale up-ended trees at the Philadelphia Zoo, prize chimpanzee, Pandora, was on hand to have her picture taken with woodsmen clearing away the debris with chain saws. Keeper John Regan (center) seems mighty surprised at Pandora's antics on the tailstock of the Disston saw being handled by William Condell of the Asplundh Chipper Co., Jenkintown, Pa. *The Asplundh Tree*, company publication, carried the photo and the mail brought in scores of humorous comments.

Monkey Business Hits Timber Industry: Chain Saws and Chimpanzees New Team

All the monkey business in the world doesn't take place in a zoo, but a whopping big percentage of it does.

Especially when two whimsical editors come across a zoo story with a melange of storm-uprooted trees, a chimpanzee, and a chain saw all looking for a place in print.

Not too long ago, H. F. Ertel and Dick Carpenter, editors of *The Asplundh Tree*, company publication circulated to 6,000 working woodsmen, saw a story in the paper which told of a gale that had uprooted a number of trees in the Philadelphia Zoological Garden. With the story was a picture of Pandora, the zoo's prize chimpanzee, hanging on for dear life to the tailstock of a Disston chain saw (produced by Henry Disston & Sons, J-11 Tacony, Philadelphia 35, Pa.) purportedly lending a furry hand in helping clear up the debris.

Philadelphia dailies, tongue in cheek, had played the story big. Ertel and Carpenter chased down the photo and got on the bandwagon too. But they played the story with a twist. They wondered, in their version, whether woodsmen of the future would resemble Pandora.

Then the mail started to roll in Seemed that loggers and woodsmen, reading the article, not only granted the possibility, but actually claimed having worked with Pandora's spitting image, bosom buddies they had no hesitation in naming.

Pleasantly taken aback by the wealth of humorous response, Ertel and Carpenter—who would sooner be caught without green eyeshades than let a good thing die—hastened to find a good follow story.

Leaning heavily on a photograph supplied by amiable Roger Conant, the zoo's curator of reptiles, and an artist's retouch brush, they came up with a photograph of Massa, bad-tempered African gorilla, waving a chain-saw like a feather and clutching a saw-log in the other muscular paw. This photo ran in their next issue. Over the photo ran the query, "Foreman of the Future?" Now, the editors' problem: What will they do for the next issue?

THE MODERN LAWN MOWER SHARPENER

CUTS MAINTENANCE COSTS

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LOWER CAPITAL INVESTMENT

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Economically and Quickly Sharpens All Municipal Mowers

Priced $241.50 (less motor)

Sharpens All Reel Type Mowers • Hand, Power or Gang • 10 to 20 Minutes • No Dismantling No Extra Attachments Needed

All reel type mowers, from 5-inch edgers to 36 inch power mowers, are quickly sharpened to extreme ends of both left and right twist reel blades. Handle, wheels, roller and motor remain in place when sharpening is in process. Bed knife is sharpened in same brackets that hold mower in grinding position. No extra attachments required. One lever puts mower or bed knife in grinding position. 100% steel construction. Grinding head rides on five ball bearing races. Small, compact, easy to operate. Sharpens wood chisels, joiner knives and planer blades without extra attachments. Skate Sharpener Attachment available.

1/3-hp. G.E. 60-cycle Motors now available—$21.50 extra.

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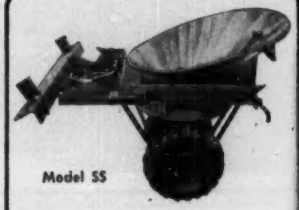
FLINK SPREADERS

So Good Uncle Sam Wants First Call . . . .

Yet Immediate Orders Can Still Be Filled



Model SS

New improved pull type Spreader for sand, cinders and all other granular materials used for ice or dust control and sealcoating. Large hopper for easier charging. The demand for Model SS Spreaders for military airport use has limited the civilian availability; however, we will continue to fill orders as received as long as material holds out.

Thousands of Flink "Power-matic" hydraulic drive, tail gate spreaders are currently in use for ice control, dust control and road building and maintenance. Does not limit the use of the truck for spreading alone. Cab control. Write for literature and name of distributor near you.

THE Flink CO. STREATOR ILLINOIS

Department 600

First Hundred Years of Gamewell Fire Signaling

While this is the month of Christmas bells, unfortunately every month is in season for fire bells. The sooner they peal, and there is a fire, the quicker the fire is mastered. It's the fire alarm that gets them ringing, instantly upon discovery of the fire. Just before this old year runs out, it is well to remember that it is the 100th year with fire-alarm telegraph.

It all started in Boston, Mass., where in 1851 the first practical system was installed consisting of 19 bell strikers and 41 firm-alarm boxes connected by closed metallic circuits to a central alarm station. Then, as now, when a street box was operated, a number identifying the box location was sent electrically to the central station. In that first system, the operator transmitted the number of the towers where it was simultaneously sounded by the automatic bell strikers. Today the number is transmitted to the fire stations.

This system's vast improvement over all previous methods interested John N. Gamewell of Camden, S. C., who acquired from the inventors, W. F. Channing and Moses G. Farmer, the right to use their inventions and patents. Thus, was born the Gamewell system of fire signaling now widely used in the larger municipalities throughout the world.

The last hundred years have witnessed the greatest technological activities in the history of the earth. New inventions have improved on or outmoded earlier inventions of the same century. They have extended from phonograph to radio to television; from stagecoach to rapid transit; kerosene to high octane gasoline, and hand and horse-drawn fire engines to motor fire apparatus. The fire-alarm telegraph has remained essentially as John N. Gamewell offered it to the municipalities.

In these hundred years nothing better has been devised, for what could be better than pulling a box handle at Main and 12th Streets and having that location instantly recorded in fire-alarm headquarters and retransmitted to the fire houses from which the engines often roll while the bell is still ringing? This is the Gamewell system of fire signaling, offered by the same company which is located in Newton Upper Falls 64, Mass., and maintained at original incomparable efficiency.

CUT COSTS with a LINDSAY MODEL 33 COMPRESSOR

Water Department, Municipalities and Contractors choose this powerful low-cost compressor for opening service trenches and other jobs for which light paving breakers and rock drills are used. Write for detailed information. Dealerships are available in some areas.

P. K. LINDSAY COMPANY
97C Tileston St., Everett 49, Mass.

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SEWER SCOOTER*
* Trademark

Sewers Clean Themselves With a Sewer Scooter

100% self-propelled for 6" to 96" sewers—Is equally effective for all conditions and problems of sewer maintenance—completely cleans sewers of all sediments: rocks, gravel, sand and "hard-to-move" sludge. Quick and efficient in operation. Investigate today! Ask for Bulletin.

Dealers—Some good territory open

Fitzgerald Engineering Co., Inc. P. O. Box 289-G, Coral Gables 34, Fla.

Surfa-slick *Patent Applied for*
SELF-HEATING ASPHALT SMOOTHING IRON

Municipalities! This lightweight, rugged, simple, time and money saving smoothing iron will pay for itself in a few days' use.

HOT IN TEN MINUTES **HOT** ALL DAY LONG

- RUGGED
- SIMPLE
- SAFE
- ECONOMICAL
- LABOR SAVING
- COMPACT

Dealer inquiries requested

No more building and loading fires on your asphalt jobs!

J. E. WOODS MFG. CO.
1516 First St., San Fernando, Cal.

Electric Fanfold Typewriter For Multi-Copy Forms

Any desired number of carbon copies are obtained from this machine.

The use of continuous forms provides a fast, economical method of preparing forms that require one or more copies. These include invoices, orders, requisitions and other multi-copy municipal records.

The Underwood electric fanfold, especially designed to do this work, includes a tabulator which enables rapid positioning of the carriage to predetermined decimal locations to speed billing operations.

With electric operation all the operator has to do is touch the keys of the familiar standard typewriter keyboard. Uniform type impressions are automatic, and ten pressure-control settings automatically give any desired number of carbon copies. The Underwood fanfold with ten key keyset decimal tabulation is available at Underwood branch offices throughout the world. The main office of the Underwood Corp. is at 1 Park Ave., New York 16, N. Y.

Something new for pick-up trucks to convert them into station wagons — the Dixie Tallyho.

One-Piece Unit Converts Truck Into 10-Passenger Station Wagon

The Dixie Tallyho is a complete one-piece unit which can be used on any one-half ton pick-up truck, converting it into a 10-passenger station wagon. According to the manufacturer, Dixie Tallyho, Inc., Fairburn, Ga., no bolts, screws, or fasteners are needed for this equipment which is safe, comfortable, and weatherproof.

The frame is of rigid and strong tubular steel, and the top and sides of heavy Vinyl plastic covered fabric reinforced with hardwood slats. The sides, which are weatherproof and are simple to raise and lower, are fitted with heavy clear plastic windows that will not break or crack.

The seats are mounted on steel tubular construction with spring action. Wood bottoms and backs are padded and covered with heavy plastic which is easy to wash with soap and water and will not crack or burn.

New Type Digger Available For Heavy-Line Construction

According to The White Motor Co., Cleveland 1, Ohio, new efficiency in mobile digging equipment is resulting from development work incorporated in a new service unit now in operation for the Sordoni Construction Co., Forty Forts, Pa. It is being used for setting and spotting utility-line poles, digging concrete footings for building construction, and for digging transmission tower footings. Sordoni uses a White Super power truck for this new equipment. It is a Model WC-20 White with 196-inch wheelbase, two-speed axle, five-speed transmission and 9.00 by 20-12 ply tires.

Mounted on the White chassis is a four-man crew compartment body designed by Sordoni engineers. The cab is equipped with hot-water heater, clothing compartment, sliding windows in front and rear, and side roll-down windows.

The derrick employed is capable of setting 65-foot poles. A 12,000-pound-capacity double drum winch is mounted behind the crew compartment. Other features of the unit are a two-speed-forward, one-reverse front mount single drum 10,000-pound-capacity winch, and power-take-off-driven hydraulic controlled earth-boring machine equipped with a 15-foot digging shaft.

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Make your "first-due" truck a "Wetter Water Wagon." Attack the fire immediately with a booster or 1½" line—charged with "wetter water." Records show you can put out most of your fires—or maintain a foothold while you lay in your heavy lines.

Put UNOX Penetrant "Wetter Water" in your booster tank today or proportion it into your lines. Write for the pamphlet "Miami Wetter Water Wagon" (F-7247).

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UNOX is a trade-mark of Union Carbide and Carbon Corporation.

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Available on or about July 1, 1951

Man, 41, with 20 years' experience, is seeking a permanent connection with a progressive community. Five years of technical training. Can offer an excellent work record, a wide reputation and an aggressive promotion of planning and sound municipal administration. Fluent speaker and writer.

Wishes personal interview and acquaintance with community before employment. Has impeccable references. Salary open.

Address replies to

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Plan Now to Attend . . .

THE GOLDEN ANNIVERSARY MEETING
OF THE

AMERICAN ROAD BUILDERS' ASSOCIATION

RICE HOTEL HOUSTON, TEXAS

JANUARY 21-24, 1952

San Jacinto Monument and U.S.S. "Texas."

Gulf Freeway in Houston.

Then on to Mexico

TRAVEL BY PLANE WITH CONGENIAL COMPANIONS

TO **Mexico City and Acapulco**

JANUARY 25-FEBRUARY 3, 1952

VISIT famous shrines, ancient ruins and witness thrilling bull fights . . . indulge in exciting deep sea fishing . . . partake of renowned Mexican hospitality . . . stop at the best hotels . . . ride in luxurious motorcars with English-speaking chauffeurs . . . enjoy 6 to 9 days of delightful relaxation following the ARBA meeting.

INFORMATION SENT ON REQUEST. AMERICAN ROAD BUILDERS' ASSOCIATION. INTERNATIONAL BUILDING, WASHINGTON 4, D.C.

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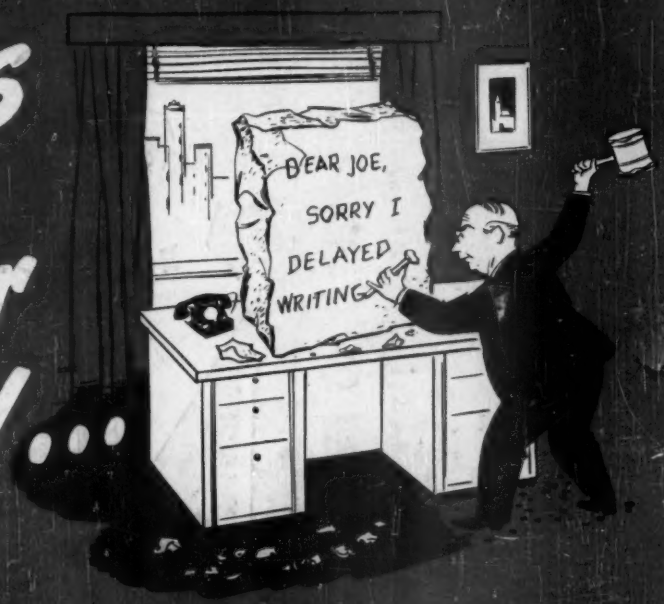

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